

THRILLING

WINTER  
ISSUE

# WONDER

STORIES

15¢

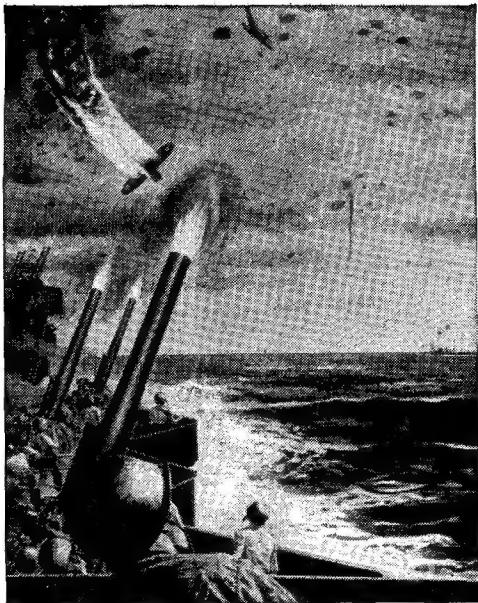
ATOMIC  
STATION  
By FRANK  
BELKNAP  
LONG

## FORGOTTEN WORLD

*A Novel of the Future*  
By EDMOND HAMILTON

## THE DISCIPLINARY CIRCUIT

*An Amazing Novelet*  
By MURRAY LEINSTER



**DEATH IN THE AIR.** Many a Jap pilot, spinning down in flames from high over an American warship, quite literally never knew what hit him. Neither did enemy intelligence, bewildered by the accuracy of Allied gunnery.



**FIVE-TUBE RADIO** transmitter and receiver, in the nose of the shell, is the heart of the secret weapon. In flight, the transmitter broadcasts a continuous radio wave. Reflected back from the target, this wave explodes the shell at exactly the right moment!

## THE SHELL WITH A "RADIO BRAIN"

Army, Navy lift censorship on mystery weapon that licked V-Bomb, Kamikaze attacks



**"CIGARETTE - CASE" RADIOS**, small enough to wear, are made possible with this "Mini-Max" Battery. It packs 22½ volts into a package smaller than a standard box of safety matches!

**TYPICAL** of "Eveready" "Mini-Max" power is this 15-volt hearing-aid battery. Small, light, economical, it makes possible lighter, easier-to-wear hearing aids. Now available.

**N**OT EVEN the Atomic Bomb was more "hush-hush" than the "Variable Time Radio Proximity Fuse"—a fuse mechanism that decides for itself when to explode; requires no advance setting.

Transmitter, receiver, and detonating mechanism all draw power from a tiny "Eveready" "Mini-Max" battery: a "powerhouse" rugged enough to withstand the shock of the gun's discharge: a force 20,000 times that of gravity!

**EVEREADY**  
TRADE-MARK  
**MINI-MAX**  
TRADE-MARK

The registered trade-marks "Eveready" and "Mini-Max" distinguish products of National Carbon Company, Inc.



## BECOME an ACCOUNTANT

**IF** you are doing the "chore" work of accounting as a bookkeeper, ledger clerk, cost clerk, billing clerk, or in one of the other many record keeping jobs—

You should consider climbing higher—becoming an accountant.

Why be satisfied all your life with a small salary and an ordinary job when there is such a large future for the man or woman who understands accountancy in all its forms and phases?

One big difference between you and the successful accountant is that he doesn't do the chores. He bosses those who do the drudgery and he gets the money and prestige. And he does that because he knows the principles behind the records you keep—can plan those records and interpret them to management. He knows what you know—and a lot more.

There are two ways in which you can get this knowledge which will qualify you for an accountant's position.

First—the old way of day-by-day experience on the job. This is the long route—taking many, many years, sometimes a lifetime. Most people taking this way never get anywhere. Why sacrifice years of success—lose time and money—when there is a better and easier way?

Second, the LaSalle way of learning in your spare time—studying and preparing for the step ahead. You learn by doing—you study accounting principles and solve accounting problems. You cover accountancy from the basic principles right up through Accounting Systems and Income Tax Procedure—C.P.A. training if you so desire.

# Are YOU doing bookkeeping "chores"? **CLIMB HIGHER!**

As you go along you absorb the principles of auditing, business law, statistical control, cost accounting, organization, management and finance, etc.

This way is not magic. It is not easy. It requires giving up certain spare time to serious study. How long will it take you to acquire this accountancy training is strictly up to you—you can go as fast or as slowly as you choose. But after you have gone part way (you need not wait until you are clear through the training) you will find yourself stepping up to better positions.

And once you have mastered this fascinating profession—once you have become an accountant—then you will have the money and the standing to make your dreams come true. You will be a respected member of the best paying profession and equipped to go out into public accounting or to climb to a top management position.

Our free 48-page booklet, "Accountancy, the Profession That Pays," tells you what you must know to be an accountant and how you can prepare in your leisure time at moderate cost. The coupon below will bring this booklet quickly without cost or obligation. You already have a start in this field; now find out how you can go all the way. Do it today.

### **LASALLE EXTENSION UNIVERSITY** **A Correspondence Institution**

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I'd like to know more about your home study program to help me prepare for an accounting career. Please send me your free 48-page booklet, "Accountancy, the Profession That Pays."

Name.....Age.....

Present position.....

Address.....

City & State.....

SIXTEEN ADDITIONAL PAGES IN THIS ISSUE!

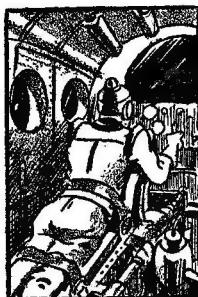
# THRILLING WONDER STORIES

Vol. XXVIII, No. 1

Every Story Brand New

Winter, 1946

*Coming in the  
Next Issue*



**BATTLE OF  
THE BRAINS**  
A Fantastic Novelet

By  
**JERRY SHELTON**

•

**ROCKET PANTS**  
An Interplanetary  
Novelet

By  
**NOEL LOOMIS**

•

**UNDERMOST**  
An Astonishing Novelet

By  
**MANLY WADE  
WELLMAN**

•

Plus Many Other  
Novelets, Stories  
and Features

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February, 1946, issue

PRINTED IN THE U. S. A.

**Read Our Companion Science Fiction Magazine—STARTLING STORIES**

A COMPLETE NOVEL OF THE FUTURE

## FORGOTTEN WORLD

By  
**EDMOND HAMILTON**

Star-sick Laird Carlin is ordered back to Earth for a rest cure—and there on the ancient, ancestral planet, his love for a girl lures him into the toils of a weird conspiracy! ..... 13

### Two Complete Novelets

THE DISCIPLINARY CIRCUIT.....	Murray Leinster	44
Fleeing from the fury of despots through parsecs of space, Kim Rendell and Dona Brett dodge ghastly dangers!		
SIREN SATELLITE.....	Arthur K. Barnes	64
A daring crew of spaceteers faces a grim prospect—unless Gerry Carlyle wins a devouring monster as her ally!		

### Short Stories

INFORMATION PLEASE.....	Stanley Whiteside	79
A mechanical super-brain possesses a one-track mind		
ATOMIC STATION.....	Frank Belknap Long	83
Roger Sheldon puts up a battle when energy runs amuck		
CLUTCH OF MORPHEUS.....	Larry Sternig	92
Rackam's comet induces a fatal sleeping sickness		

### Special Features

THE READER SPEAKS.....	Sergeant Saturn	6
Announcements and letters		
THE STORY BEHIND THE STORY....	A Department	110

ON THE COVER: Painting by Earle Bergey depicts a scene in Murray Leinster's complete novelet, THE DISCIPLINARY CIRCUIT.

# Be Your Own Boss



**I WILL SHOW YOU HOW TO START  
A RADIO SERVICE BUSINESS  
Full Time or Spare Time WITHOUT CAPITAL**

**J. E. SMITH, President**  
National Radio Institute  
Our 31st Year of Training Men  
For Success in Radio

Let me show you facts about rich opportunities in Radio. See how knowing Radio can give you security, a prosperous future, and let you name *your own hours* as *your own boss* in *your own* Radio business. Send the coupon for FREE 64-page book, "Win Rich Rewards in Radio." Read how you practice building, testing, repairing Radios with SIX BIG KITS OF PARTS I send you.

**Future for Trained Men is Bright  
in Radio, Television, Electronics**

The Radio Repair business is booming NOW. In your own spare time or full time Radio business you'll make good money fixing Radios, plus a good profit on Radio parts and put yourself in line for more profits selling new Radios as soon as they are available.

Trained Radio Technicians also find wide-open opportunities in Police, Aviation, Marine Radio, in Broadcasting, Radio Manufacturing, Public Address Systems, etc. And greater opportunities are coming, when Television and Electronics are available to the public. Send for free book now!

**Many Beginners Soon Make \$5, \$10  
a Week EXTRA in Spare Time**

The day you enroll I start sending EXTRA MONEY JOB SHEETS to help you make EXTRA money fixing Radios in spare time while learning. You LEARN Radio principles from my easy-to-grasp lessons—PRACTICE what you learn by building real Radio Circuits, with Radio parts I send—USE your knowledge to make extra money in spare time.

**Find Out What N.R.I. Can Do for YOU**

MAIL COUPON for FREE 64-page book. It's packed with facts about opportunities for you. Read the details about my Course. Read letters from men I trained telling what they are doing, earning. Just MAIL COUPON in an envelope or paste it on a penny postal. J. E. SMITH, President, Dept. 6B09, National Radio Institute, Pioneer Home Study Radio School, Washington 9, D. C.

## I TRAINED THESE MEN

**\$250 a Month  
in Own Shop**

"I am now operating a radio shop for myself and other men. I work in my spare time, and find it a profitable hobby. My extra earnings run about \$10 a week. I am sending you my kit, took your N.R.I. Course." — Ferdinand Zirbel, Chasey, N.D.



Fixing Radios Profitable Hobby  
441 am doing radio work in my spare time, and find it a profitable hobby. My extra earnings run about \$10 a week. I am sending you my kit, took your N.R.I. Course." — Ferdinand Zirbel, Chasey, N.D.



**\$50 a Month in Spare Time**

"Am making over \$50 a week profit from my spare time. I am the other N.R.I. graduate working for me. I like to hire N.R.I. men because they know radio." — Norman Miller, Hebron, Neb.



"I have a spare time Radio and Electrical shop of my own which has been very profitable, due to the efficient training I received from your Course. Last year I averaged over \$50 a month." — Fred H. Griffin, Route 3, Newville, Pa.

My Radio Course Includes Training in  
TELEVISION • ELECTRONICS • FREQUENCY MODULATION

You Build this A.M.  
SIGNAL GENERATOR  
that gives you valuable experience. Provides amplitude-modulated signals for test and experiment purposes.



## LEARN RADIO BY PRACTICING IN SPARE TIME

**with 6 Big Kits  
of Radio Parts  
I Send You**



You Build this  
SUPERHETERODYNE  
CIRCUIT that brings in local and distant stations. You get practical experience putting this set through fascinating tests!

You Build this  
MEASURING INSTRUMENT  
yourself early in the course—use it for practical Radio work on neighborhood Radios to pick up EXTRA spare time money!

## 64 PAGE BOOK **FREE**

**J. E. SMITH, President, Dept. 6B09  
National Radio Institute, Washington 9, D. C.**

Mall me FREE, without obligation, your 64-page book: "Win Rich Rewards in Radio." (No salesman will call. Please write plainly.)

Age .....

Name .....

Address .....

City .. (Please include Post Office Zone Number) State ..





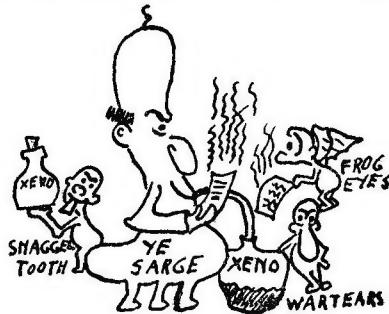
## A Department Conducted by SERGEANT SATURN

**T**HIS time out from Betelgeuse in old Orion, ye Serge is blue. He is blue not only because of the all-too-faithful likeness of him and his produced by Roger Rehm and reproduced below, but because through some eerie madness that seems to have descended upon Terra from the outer ether, he is going to have to give a lot of good letters the once over lightly and dismiss them with a word of thanks. This old blue Serge is swamped with mail.

Frogeyes, put that brush away. There is no lint on this blue Serge! Stop it, you triply-cre-

Noel Loomis, who wrote "The City of Glass," and Manly Wade Wellman, who needs no introduction to sf readers, lined up solidly in a T formation. Each has written an unusual and swiftly ingenious novelet, which gives the April issue pretty much the look of one of those all-star movies.

The novelets are "Battle of the Brains" by Shelton, "Rocket Pants," by Loomis and "Undermost" by Wellman. Since the short stories that go with them will be on virtually the same high level, you'll want to take a look at the next **THRILLING WONDER STORIES**.



tinic Mercurian mushroom, that's not lint, that's dandruff! And that goes for you too, Wart-ears, and you, Snaggletooth! You're scraping off ye Sarge's lone curl—to say nothing of his scalp! Get back to the Xeno vats where you belong!

Now, as for Mr. Rehm, may Pluto inundate him with its deadly waters! Why did you draw me with my patch off? Has interplanetary television already come to Earth? Ye Sarge will have you know that he has a set of very special toupees of ultra-soft feather-cut Neptunian yak hairs, which are enough to make anyone's tresses curl. He shouts "Unfair, unfair!" to the Universe at large, which most of it should not be.

### LOOKING FORWARD

**I**UR transtime televiser, set for April, reveals a triply exciting prospect with Jerry Shelton of "Devils from Darkonia" fame,

### LETTERS FROM READERS

**B**EFORE getting at the crux of **THE READER SPEAKS**—what's that, Snaggie Old Tooth? . . . Why, you Ganymedian ignoramus, a crux is a—is a—is a—fetch me my intergalactic lexicon, Wart-ears, ye Sarge is sinking! And, Froggie, the Xeno to clear his vision!

Ye hydra-headed deities of Saturn's third ring! You say the dictionary was used to add flavor to the last batch of Xeno, Frog-eyes? No wonder ye Sarge is in literary mood today—to say nothing of wordy.

Ah, lackaday—at any rate, before tackling the atrocious insults that have arrived from Terra in such unprecedented quantities, your Sarge wishes to thank a number of epistles whose missives are not included only through lack of space.

So, gramercy to D. S. Farney of Newport, Kentucky, Vernon W. Cooper of San Antonio, Texas, Dan Wilhite of Cullendale, Arkansas, James V. Taurasi of the U. S. Army in France, Jerry Burge of Atlanta, Georgia, Howard S. Allen of Coatesville, Pennsylvania, and Walter A. Coslet of Helena, Montana.

Ye Sarge also extends his thanks to the scores of others who should be happier nameless, to say nothing of the slightly surrealistic Laura Lee of Oakland, California, who penned a lengthy *(Continued on page 8)*





YOU CAN'T LEARN GOOD ENGLISH

..by Magic!

AN I. C. S. TRUE STORY

HARRY KELLAR was one of the greatest illusionists the stage has known. Despite the skill at sleight-of-hand that won him recognition as "the magicians' magician," he was topped in public favor by a rival who had mastered Good English.

Then a newspaper writer took Kellar to task for his ungrammatical speech. It was an extremely sarcastic review, but the subject expressed no resentment. Instead, he wrote to the International Correspondence Schools for the assistance his magic couldn't provide.\*

I. C. S. instruction proved to be the answer for Harry Kellar. It will do as much for you! Unless you are in the public eye, your grammatical slips aren't being ridiculed in print. In your own business or profession, however, they count against you just the same.

With few exceptions, mastery of Good English is essential to success in America today. This will be as true tomorrow. Learn from I. C. S. — not by magic but by spare-time study of clear, helpful, authoritative texts. The coupon brings full information.

\*Source: "American Vaudeville: Its Life and Times," by Douglas Gilbert (published by Whittlesey House); I. C. S. records.

## INTERNATIONAL CORRESPONDENCE SCHOOLS



BOX 3970-E, SCRANTON 7, PENNA.

Without cost or obligation, please send me full particulars about the course *before* which I have marked X:

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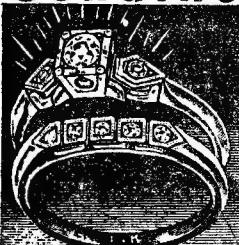
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## THE READER SPEAKS

(Continued from page 6)

screed to this old space dog in verse. It concluded—

"I love you, Sarge Wargy  
You're the only one for me  
I'll mess you up with a cleaver  
And put cyanide in your tea."

Apparently, Wart-ears, fair Laura failed to realize that ye Sarge is impervious to all earthly poisons. He's been exposed to them too long, like his old friend Mithridates, who reigned in Parthia a good two thousand years ago. The only difference is that the Sarge didn't acquire his immunity on purpose to defeat assassins. He has simply had to take too much—and use Xeno as an antidote. Good old Xeno.

But now to the creme de la creme of the crop. After failing to write for an issue or two, the Crystal City crystal gazer leads off this time.

## CHADDER CHEESE

By Chad Oliver

Dear Sarge: Before plunging recklessly into the turbulent contents of yet another (gad, will they never stop?) missive to old TWS, let us examine one item which so stands out that it deserves to be in a class by itself. I'm speaking of Henry Kuttner's splendid novel in the Fall issue—*Sword of Tomorrow*. That, Sarge, was a really fine story; one of those things that pop up occasionally in sfantasy and set it above other types of magazine fiction. Kuttner has here presented an adult, thoughtful tale, written with a power that Kuttner has seldom equaled. And he has many a good yarn to his credit. That chapter about the dream world, in particular, evoked many fond memories of the late A. Merritt. I think we all owe a vote of thanks to Author Kuttner for *Sword of Tomorrow*, and also to TWS for printing it.

So much for the novel. The remaining fiction contained nothing memorable, so far as I could determine. Polton Cross may have written science-fiction's greatest story in *Space Trap*. It may be a sweeping, brilliant epic of the starways. But I don't know. You see, I stumbled through the opening where our hero, Ken Richmond, is introduced, along with Reekah Lothar (that is really corny), the Martian villain.

I got to the part where some simple soul hollers: "It's Special Agent Hoot McGoot in Ship Fifty-one, Section B, Region X-8! He's turned into an ape!"

Hesitantly, I glanced at the ending to see if I could expect any improvement, and caught myself reading all about fifteen miles of tubes and somebody's famous pills. At that, it was more interesting than Cross' formula conclusion. With no regrets whatsoever, I left *Space Trap* behind and started another story.

The Coblenz story was okay, but not worthy of him. George Whitley, in *One Came Back*, illustrates an unfortunate point of view. Suppose, just for the heck of it, that our moon explorers had contacted some disease and had sent some friends among the lunar race to Earth for help. What happens? Because they have fifty legs and feelers and perhaps rotating eye-balls, therefore, obviously, they must be enemies. Run the ship through them. Truly, this is an enlightened age we live in.

Fearn's *Interlink* had a good idea, but the story was just a detective yarn regardless of setting. And that line wherein the police officer raises his square chin and bright blue eyes to his superior and declares that he doesn't care if the suspect is the girl he loves with all his heart, he's still going to blast her with his acid gun, because, after all, he is first, last, and always a policeman, is getting slightly jaded. *Cosmic Caravan*, by Ed Weston, was at any rate readable.

The interior pix were good, on the whole, despite a certain tendency to stick sex appeal into every scene. Nothing against sex appeal, of course (he says with a lustful leer), but I question its power in an illustration. Berger's cover was on the beam, tomato soup and all. Give us more like that.

(Continued on page 10)

# Three months after beginning your lessons I STARTED PLAYING IN A DANCE ORCHESTRA



**"NOW I HAVE  
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**writes Bert Magyar of Barnwell,  
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**"I** T HAS been a pleasure studying my lessons and I am well pleased with your Course. Three months from the time I began taking your lessons I started playing with a dance orchestra, and at the present time I have an orchestra of my own.

"I have understood my lessons clearly, and have always had a deep interest in them.

"Due to the rapid progress I have made playing the Saxophone, many people have asked where and how I have been taking my lessons. I can truly recommend your easy Course for any student who wishes to learn music a quick and easy way.

"Thanking you for helping me obtain this wonderful Course, I remain"

*(Signed)* Bert Magyar

## Thousands have learned to play their favorite instrument this quick easy way for only 7c a day . . . SO CAN YOU!

YOU'D be amazed if you could read the many letters like the one above in our files, from people who have realized their musical ambitions by taking our courses . . . people who had no special gift for music, no previous training. And you'd understand why more than 760,000 folks from all walks of life have studied music this quick, easy "Print and Picture" way.

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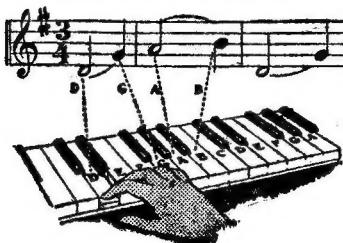
take up more difficult pieces. And almost before you know it, you are amazed to find that you can take many popular numbers and play them by note.

What's more, you'll be thrilled to know that you can learn your favorite instrument this simple, home-study way for less than 7c a day. That covers everything . . . printed lessons, pictures and diagrams, valuable sheet music, and our Personal Advisory Service.

If you've always wanted to learn to play but hesitated because you thought it was too difficult or too expensive, here's your chance. Send for Free Booklet and "Print and Picture" Sample. You'll see at once how easy it is to learn this quick, low-cost way: U. S. School of Music, 2942 Brunswick Bldg., New York 10, N. Y.

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## THE READER SPEAKS

(Continued from page 8)

"The Reader Speaks" was interesting as usual, even without a letter from Oliver. Incredible as it seems Kennedy had the best letter, despite everything.

And now, beloved Sarge, I shall take issue with you on two points. First, the moon rocket, or ship, or whatever they finally use. The advantages as a base for further explorations of space, the possible wealth of natural resources, the opportunities for the advancement of science, seem almost painfully evident. And, from a strictly romantic point of view, it would be a real experience. Of course, we realize that you have been there and it's old stuff, but we are not all that fortunate.

Second, aenent Lovecraft. I am not one of those fanatics on the subject, and I'll grant you that his literary halo has been polished over-bright, but H. P. Lovecraft was still a great writer and he produced some classics that are gems of literature. Take the trouble carefully to read *The Nameless City*, for example, and see if you don't feel the power of that story. On the other hand, he wrote some stuff that is downright dull.

This letter is becoming a novel, and I have no desire to compete with Kuttner, Hamilton, and their brethren. Thanx for listening, and keep up the swell work with TWS—c/o Mrs. R. A. Taylor, Crystal City, Texas.

Okay, Chaddo old grulzak, so it was a novel—and, for you, in mellow mood despite the snide finale. On this rocket-to-the-moon business, a number of you Terrean correspondents seem to have missed ye Sarge's point. He has no real objection to human space travel, having become pretty fatalistic about the whole matter. His beef was really directed against the low intellectual quotient of this particular group of rocketeers. Snaggletooth, page Willy Ley.

On Lovecraft and the power of sex in illustrations, *chacun a son goute* as ye Sarge used to say when in Paree. Frogeyes, get off my feet. I said *goute* not *gout*, but that doesn't say my corns aren't suffering—Wart-ears, one more snide crack about corn and the Sarge and you'll be blasted out into space through the port rocket tubes. You say it might be more merciful? Oh, quiet and roll out the Xeno.

Slurp, slurp. . . . Ah, the next missive is mellow, Snaggie old tooth, truly mellow.

## THE BELL TOLLS

By A. V. Bell

Gentlemen: After four years I was a little bit surprised to run across your fall issue with a story like "The Sword of Tomorrow." Let me say right here that it was a little bit of all right, but then I suppose that after all I was a little starved for my favorite pastime, namely science stories such as *Thrilling Wonder Stories* has been in the habit of publishing since I have been reading it, and that has been a long time because I read it in the old days.

I once thought that I had some good ideas for this type of story, but I suppose the last four years have caused a dimout.

I am not much given to the habit of writing to any magazine but thought that I would let you know that you have another old time reader back with you.

By the way if Kuttner ever drops around to your office tell him to get busy and start pounding out some more like "Sword of Tomorrow."—1834 East 4th Street, Ext. Winston-Salem, North Carolina.

All ye Sarge can do is drop a polite curtsey and murmur a surprised "thanks." So he murmurs a surprised, "Thanks." Prop me up, helots, while I drop that curtsey. If you don't, I may drop more than that.

(Continued on page 102)

# WHO WAS GUILTY?

Can you solve this crime?



## Here are the clues

The body of William Manson, a well known and prosperous young man, was found behind a clump of bushes just outside his home in the early morning hours by Patrolman Harris. Near by was the neck of a heavy quart bottle, with other glass fragments scattered about. A blow from this weapon had crushed the victim's skull. Investigation developed that Manson had been in possession of a large roll of bills this afternoon and was carrying it in his pocket and that at least six people had seen him handle the money. The lady friend, waiter, a florist, and three bowling companions. Examination of the broken bottle neck disclosed well defined finger prints. Finger prints obtained from all the probable suspects, when compared with those on the bottle, soon solved the mystery.

## ...now...here are the FINGER PRINTS



### Who was guilty?

- 1. Lady Friend
- 2. The Waiter
- 3. The Florist
- 4. Bowler #1
- 5. Bowler #2
- 6. Bowler #3
- 7. The Slayer

## A clue leads to the finger prints and the finger prints to the slayer

When the murderer, in his greed, carelessly dropped the bottle he branded himself. The Police Department Finger Print Experts immediately secured prints from the several people who had occasion to know Manson was carrying a large sum of money. Comparison with the freshly made prints found on the smooth glass bottle neck brought the killer to justice in short order. Study the prints and see if you can put your finger on the criminal.

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Lived Before*

Says Aged Lama

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The blonde from Altair Four favored the tall dour-looking young man with a bright smile

# FORGOTTEN WORLD

By EDMOND HAMILTON

*Star-sick Laird Carlin is ordered back to Earth for a rest cure — and there on the ancient, ancestral planet, his love for a girl lures him into the toils of a weird conspiracy!*

## CHAPTER 1

*Stranger from the Stars*

CARLIN was the only one of the four hundred passengers on the "Larkoom" who hated the star-ship and everything about it.

He was bored with the vessel and everyone aboard. A pack of chattering idiots! For

the hundredth time since leaving Canopus, he told himself that he was a monumental fool to let that psychotherapist talk him into this crazy trip.

A blond girl from Altair Four came tripping along the deck and favored Laird Carlin with the bright smile that all the younger feminine tourists had practised on the tall, dark, dour-looking young man.

"Oh, Mr. Carlin, the annunciations just

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A COMPLETE NOVEL OF THE FUTURE

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said that we're only eight hours from Sol. By night, we'll be on Earth! Isn't it thrilling?"

"Just what is thrilling about it?" Carlin asked sourly.

The girl was a little dumfounded. "Why, I mean, Earth! All the ancient history we study in schools, about how men first came from there two thousand years ago. Or was it twenty-one hundred?"

She prattled on, voicing all the appropriate clichés.

"Just think, all of us in this ship came from different stars and worlds, yet long ago all our ancestors lived on that one little world Earth. And they say it's still much the same as it was then. Isn't it wonderful?"

Carlin could not see anything wonderful about it, and a little wearily he said so.

The girl flushed in exasperation. "Then why are you going to Earth at all?"

Why indeed, Carlin wondered savagely? Why the devil wasn't he back on the other side of the galaxy where he belonged, supervising establishment of the new star-ship line to Algol Six, spending his leaves in Sun City with Nila?

Nila—he yearned for her, for her gay, mocking humor, her cool beauty, her quick, clever mind. What was he doing here with a bunch of bird-brained tourists who were conscientiously tripping for local color to an old, forgotten world?

This whole part of the galaxy was a stagnant, half-dead area. This side of Vega there weren't a score of suns with worlds of any importance. And the old "Larkoom," a second-rate star-ship that couldn't make more than eighty light-speeds, was plodding determinedly and monotonously on into it.

**C**URSE that psychotherapist anyway! Why had he been crazy enough to listen to the fellow? That smug, pink, blinking Arcturian had smiled as gently as a well-bred pussy-cat as he told Carlin what his trouble was.

"Star-sick?" Carlin had flared. "What do you mean, star-sick? I've made the trip to Algol ten times in the last three months."

The psychotherapist had nodded. "Yes. And that was nine times too many. You've been overdoing it for a long time, Mr. Carlin."

Before Carlin could protest, the other man had referred to the dossier on his desk.

"I have your record here. Born at Aldebaran four thirty years ago. Graduated at twenty-two from Canopus University with the degree of Cosmic Engineer. Worked since then establishing spaceports for starship lines between Rigel, Sharak, Tibor, Algol and other stars."

The psychotherapist looked up gravely. "The point is that you've spent fifty per cent of your time in the last eight years in starships. The average has been seventy per cent since you took charge of establishing the new Algol line. And that's too much time in space for any man. No wonder you're star-sick."

"Blast it, I'm not star-sick!" Carlin exploded. "What kind of therapist are you? I come here to have you treat a perfectly simple syndrome of reflex-fatigue, and you tell me all this!"

The Arcturian shook his head wisely. "Your case was only simple on the surface, Mr. Carlin. The hypnosis showed up your trouble unmistakably. Want to hear the record?"

Carlin heard it. And it wasn't pretty. Not pretty, to hear his hypnosis-freed subconscious yelling out a frantic hatred of space and star-ships and everything connected with them.

"You see?" said the Arcturian gently. "This has been building up in you for a long time."

Carlin was stunned. He had known of other men who had got star-sick and had had to drop their work and quit traveling space for a while. Other men—but he'd always laughed contemptuously at them for it.

The psychos might declare that it was perfectly natural for a man to develop a subconscious aversion to space if he crowded his work, but the hard-bitten engineers of Carlin's set believed that a star-sick man was nine times in ten a shirker. And now he himself was told he was star-sick.

"You've got to quit work and stay out of space for a while," the Arcturian therapist told him.

Carlin felt sick at heart. "Then all my work in building up the Algol line will go into young Brewer's hands."

Still, he thought after a moment, it might not be so bad. Working in his line's main offices here on Canopus Two, he could keep in touch. And he would have more time here with Nila.

But the psychotherapist shook his head quite decisively at that.



"Don't turn!" warned the girl. "I followed you here. You are a spy!"

"No, Mr. Carlin. Your case is too dangerous for that. Your subconscious is twisted into a knot that is going to be hard to untie." He hesitated a moment as though he knew what reaction his next words would provoke. "In fact, there's only one way in which you can be normalized. That's the Earth-treatment."

"Earth-treatment?" Carlin didn't even know what it meant. "You mean, some treatment that has reference to the old planet over on the other side of the galaxy?"

The Arcturian nodded. "Yes, our ancestral planet Earth. Where all our race came from, two thousand years ago. Where you're going back to, for perhaps a year."

Carlin was knocked breathless by that calm statement.

"Me going to Earth for a year? Are you crazy? Why should I go there?"

"Because," the therapist said soberly, "if you don't I'm afraid you won't last another six months as a star-line man."

"But why can't I take a rest right here on Canopus Two?" Carlin demanded heatedly. "Why send me to that moldering, forgotten old planet where there's nothing now but a few historical monuments?"

"You've never been to Earth, I take it?" the psychotherapist asked thoughtfully.

Carlin made an impatient gesture. "I'm not interested in ancient history. That part of the galaxy is all a backwater."

"Yes," the expert said. "I know all that. But old and small and forgotten as it is these days, Earth is still important."

"To historians," Carlin snapped. "To people who like to poke in the dusty past."

**T**HE Arcturian nodded, and shrugged. "And to psychologists," he said quietly. "Most people these days don't realize something. They don't realize that we, all of us, are still really Earthmen in a way." He held up a protesting hand. "Oh, I know we don't think of ourselves like that! Since those first Earthmen pioneered to their neighbor planets and then to the stars, since our civilization spread out over most of the galaxy, a hundred generations of us have been born on different star-worlds from Rigel to Fomalhaut. But except for local modifications, the type of humanity has persisted since our ancestors left Earth and Sol long ago.

"That's because we've altered star-world conditions to fit ourselves, instead of adapt-

ing ourselves to those conditions. We've cunningly changed atmospheres, gravities, everything, wherever we went. We've kept ourselves one race, one type, that way. But it's a type that is still indexed to that old plane Earth as its norm."

"Does that explain why I have to give up my work and go live on the old relic for a year?" Carlin demanded furiously.

"Yes, it does," the Arcturian replied. "We're a star-traveling race now. But the mind can take only so much of the strain of star-travel. Overdo that strain and you get a revulsion, you get star-sickness. Then the only cure is rest for the mind in completely normal conditions. And complete normality, for us descendants of Earthmen, is—Earth."

Carlin had stormed. He carried his wrathful resistance to the last pitch.

And then the psychotherapist had crushed him.

"I've turned in your psycho-record to your star-ship line. You'll not be allowed to work there until you're cured."

And that, Laird Carlin thought bitterly, was why he was sprawled in a deck-chair here on the "Larkoom" as the old tub creaked and labored and plodded through space toward the yellow spark of Sol.

"A year!" he thought in impotent rage. "A year in that hole! I might as well be dead."

The psychotherapist had held out the hope that it might not take a year. Some cases of star-sickness responded quickly to Earth-treatment. But even a few months seemed an eternity to Carlin.

The passengers of the "Larkoom" were crowding toward the transparent wall of the deck. Earth was coming into sight. And these people—men and women bronzed by the glare of Canopus, reddened by the desert winds of Rigel's worlds, paled by the mists of Altair's planets—all were watching with an intense and eager expectation.

Carlin walked wearily over to the deck wall and watched with them. Sol, ahead, was a small and undistinguished yellow sun. Its orb was unimpressive to eyes that had looked on Antares and Altair.

And the planets that circled it were so little that Carlin could hardly make them out. He remembered half-forgotten names from ancient history—Saturn, Jupiter, Mars. And that little gray-green dot beyond must be Earth.

"Isn't it tiny?" babbled a rapturous, over-

weight woman beside Carlin. "I think it's cute!"

A very young man from Mizar Seven proudly aired his knowledge.

"That satellite beyond it is Luna, its moon."

"The moon is almost as big as the little planet!" exclaimed someone, laughing.

Carlin found their chatter getting on his nerves, and edged further along the deck. In gloomy silence, he looked down as the "Larkoom" swept in swift, almost soundless rush toward the little planet.

A gray-green, cloud-screened ball spinning around a second-rate sun—it looked like the end of the universe to Carlin. And he might have to spend a year here! His spirits sank still lower.

"They say you can get the most wonderful souvenirs here," one of the tourists' voices reached him.

Carlin writhed. He would be glad to get out even at Earth, to get away from this bunch of babbling fools.

He realized his irritability was extreme, unreasonable. It was the result of his star-sickness, he supposed. But that didn't make it any more endurable.

"Landing in ten minutes," spoke the annunciators throughout the ship. "Stasis going on."

The dim glow of the force-stasis that cushioned everything in the ship against pressure of deceleration came on like a tangible medium around them. The big propulsion-wave generators droned in lower key.

Swaddled in the cushioning force, they felt no discomfort as the "Larkoom" quickly dropped toward the little planet. Atmosphere screamed briefly outside the ship. They came down through a belt of clouds.

"That's the city New York!" cried an eager voice. "The oldest human city in the galaxy!"

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## CHAPTER II

### *Ancient Town*

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**C**ARLIN looked with a jaundiced eye on the scene widening out below them. There was a blue ocean stretching eastward, a long green coast, and an island that was covered by the grotesquely lofty buildings of an extremely antiquated type of city.

This ancient town called New York was like a memento of the primitive past. Not for a thousand years had men crowded their structures so crazily together, or built them to such insane heights.

"It's like one of the bird-people's lofts on Polaris One!" exclaimed a girl, laughing. "And how old it looks!"

Old? Yes. Pitifully old, like a withered beldame who endeavors still to maintain stiff dignity. The city looked only half-occupied, vines growing on some of the grotesque towers, parks ragged around the edges.

The spaceport, some distance northward amid low rolling hills, was so small as to be inadequate for any decent world. Carlin's practised eyes condemned the cracked, blackened tarmac, the ill-placed rows of docks, the insufficient hangar and repair buildings.

The "Larkoom" landed softly. Carlin waited wearily until the squealing rush of tourists was over, and then walked out into the soft yellow sunshine. He looked around without interest. Landing on a new world was no novelty to him.

But for a moment, he was startled by the air he breathed. It was so sweet, so buoyant, so right. It was subtly stimulating, exhilarating to the lungs. Then he realized the cause. All over the galaxy, the descendants of Earthmen had conditioned planetary atmospheres with this atmosphere of Earth as the desired norm.

He looked around uncertainly. The tourists were already being shepherded by their tour-conductors toward some old monuments at the far end of the spaceport. But he had no desire to follow them.

The psychotherapist had told him, "Live as nearly an ordinary Earth life as you can. Your cure will be quicker if you do. Best thing would be to lodge in some typical Earth home, if you can."

Carlin wondered where he could find such a lodging. There were a few Earthmen about, spacemen, port officials and the like. He could ask one of them.

He had met Earthmen before throughout the galaxy, for many of them followed space as a trade. And he didn't much like them. A proud, taciturn, half-sulky lot, they had always seemed to him.

"Can you tell me where I could find lodgings around here?" He asked a lanky, lantern-jawed man in faded clothes.

The Earthman contemplated Laird Carlin

with unfriendly eyes, taking in his sun-darkened face, his pearl-colored synthesilk slacks and jacket, every detail of his appearance that was alien here.

"Well, no," the fellow drawled coolly. "Don't know where a stranger could get lodgin's round here."

He slouched on. Carlin flushed with anger at the scarcely veiled hostility in the fellow's manner.

These blasted yokels of Earth! Living here on an old, outworn, fifth-rate planet, resenting the progress and prosperity of the great star-worlds, talking of everybody but themselves as "strangers"!

"And I'm supposed to live among them for a year!" he thought bitterly.

He started across the spaceport. He had noted a spick-and-span chromaloy building with a half-dozen trim Control cruisers parked nearby, and with the Control Council emblem on its wall. He could find out something there.

The spaceport was a somnolent, slovenly place to Carlin's eyes. A few star-ships, all of them freighters except the tubby "Larkoom," a scattering of little inter-planet craft, a few workers lounging about. Even the smallest world of the great stars would be ashamed of such a port.

That soft yellow sun, he found, had a deceptive warmth. And walking was tiring after days of the ship's artificial gravity. Then Carlin stopped as he came abreast of a rickety little planet-ship.

Two Earthmen were inspecting its stern drive-plates—one of them a stocky, red-faced young man, the other a lame younger fellow with a crutch. Carlin asked them his question.

The red-faced individual answered with the same hostility of manner.

"You'll find no lodgings around here. Better go with the rest of your crowd. There's a big tourist hotel down in the city."

Carlin swore. "Blast it, I'm not a tourist. I'm an engineer sent here by a crazy psycho to spend a year on Earth—heaven knows why!"

**T**HE lame young Earthman looked at Carlin more closely. He had a thin, pleasant brown face with intelligent blue eyes.

"Oh, an Earth-treatment man?" he said. "A few come in all the time." He asked interestedly, "You're a Cosmic Engineer? Do you mind telling me what field?"

"Star-ship line chief surveyor," Carlin said wearily. "That means I lay out spaceport and beacon routes between star-worlds."

"I know what it means." The lame youngster nodded quietly. He hesitated, frowning slightly as though weighing something. Then, as if deciding, he spoke. "I'm Jonny Land. I think we could fix you up with lodgings if you don't mind putting up with a little discomfort."

"You mean, in your own home?" Carlin asked doubtfully. "Where is it?"

Jonny Land pointed to one of the low green ridges west of the spaceport.

"Just up on the ridge there. There's only my grandfather, my brother and sister, and myself. And we have an extra room."

The red-faced young Earthman made a sharp protest. "Jonny, what the blazes are you thinking of? You don't want this fellow in with you!"

The violence of his protest seemed uncalled-for to Carlin, even granting the general Earthman hostility to strangers.

Jonny Land quietly quelled the outburst. "I'm doing this, Loesser." He looked at Carlin. "Well, what about it? I warn you that you won't find the comforts of a big star-world apartment."

"I don't expect anything like that here," Carlin answered tiredly. He felt worn out by the voyage, the discouragingly primitive aspect of this place where he must live, the open unfriendliness. He nodded. "I'll try it. The name is Laird Carlin."

"If you'll get your luggage, I'll take you up," Jonny Land suggested. "I have a truck. I'll meet you over at the terminal."

Carlin came out of the shabby terminal a little later with his two kitbags and found the lame youngster waiting at the wheel of a disreputable-looking old ato-truck.

Loesser, the red-faced young man, was standing beside it voicing emphatic protest about something. Carlin overheard a few words.

"—ruin everything by taking this fellow in!" he was saying violently. "How do you know he isn't a Control spy?"

"I know what I'm doing, Loesser," Jonny Land repeated firmly.

They broke off as they saw Carlin coming. But Loesser gave him a hot, angry glare as he climbed into the machine.

The old truck ran westward across the bumpy tarmac and started climbing an an-

cient, cracked concrete road toward the green ridge.

Carlin wondered wearily what these Earthmen were up to that made them afraid of Control? Smuggling, maybe? He didn't much care. He was hot, tired, grimy with dust, and unutterably disgusted with Earth.

The concrete road that climbed the ridge looked as though it was centuries old. And its engineering had been timid, for it wound around hills instead of cutting through them, bridged small streams instead of trampling over them. But the battered truck had difficulty negotiating even these easy grades. Its ato-motor drumming noisily as it climbed.

Carlin looked out gloomily at the sunset-lit landscape. He could not get used to the vivid, dominating green of all vegetation here. And he was shocked by the unkempt, ragged look of everything. Untended fields of weeds and clumps of woods grew right up to the road. It was dismayingingly different from the groomed, parklike planets of Canopus.

The houses Carlin glimpsed along the road added to his dislike. They were mostly old ferro concrete dwellings half-hidden by trees and bright flowers, with behind them the big tanks used in hydroponic farming. Hydroponic farming was so old-fashioned he had thought it had disappeared from the galaxy. What was the matter with these people that they didn't directly synthesize their food as others did?

Young Jonny Land was speaking to him.

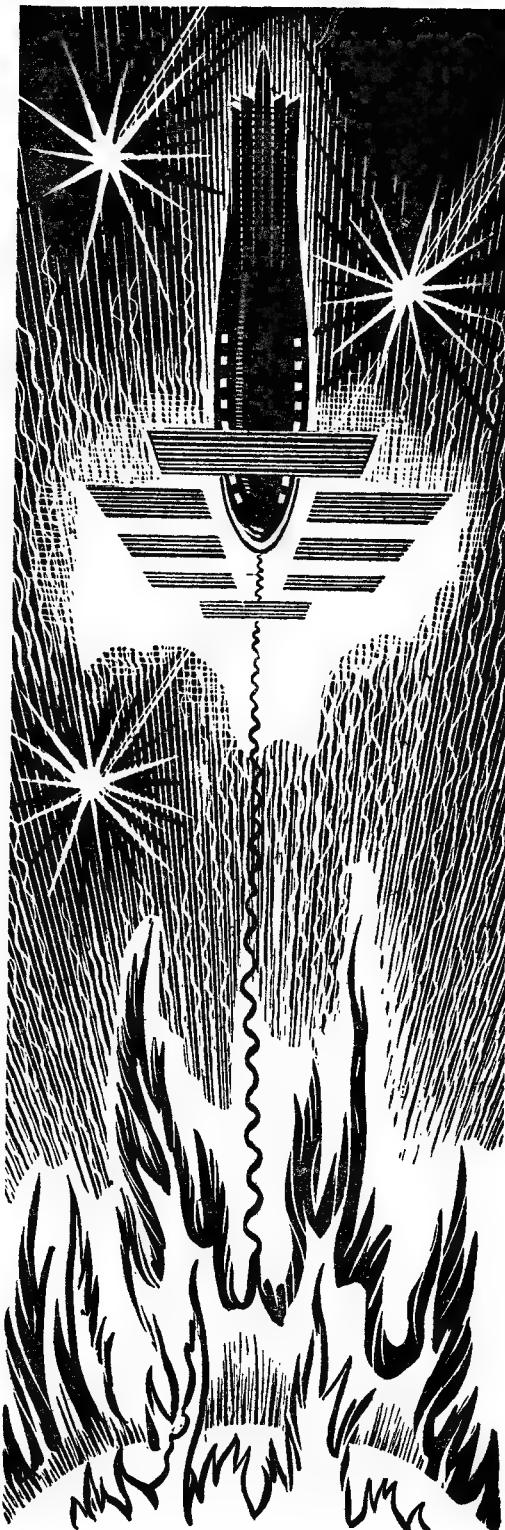
"You've never been here before? You must find Earth a little odd."

Carlin shrugged. "It's all right, I suppose. But I just can't understand how you people could let your planet get into this kind of shape. Why haven't you spread out more, instead of huddling around a few archaic centralized cities like that one back yonder?"

The lame young Earthman answered slowly, his thin, brown face turned to the road ahead.

"The answer to that is simple. One word, in fact. And that word is 'power.' We just don't have power enough here on Earth to smooth it out into a garden-planet like your star-worlds, to come and go around it any distance at will."

"Atomic power is about the easiest thing



Blinding, eye-dazing even through the filter of the heat-screens, the brilliance of Sol stunned them

to produce there is," Carlin commented skeptically.

"Yes, if you have copper fuel," Jonny Land replied. "If we had enough copper we could make a garden of this world too, could spread all around its loveliest spots and come and go by fast flier, could give up the old hydroponic farming and synthesize our food, and produce the luxuries you people have on the star-worlds.

"But we have little copper. Earth, and its sister-planets here, are all starved for it. Once, we had a lot. But not now. And it's economically impossible to haul copper in sufficient quantities from other stars. That's why we're power-starved, unable to progress."

**C**ARLIN made no further comment. He was not much interested. He was only wondering sickly how long he would have to stay on this unkempt, stagnant planet.

The sun was burning his neck, for the old truck was topless. He was jolted by holes in the ancient road. The sweetness of the air had lost its magic for him, for now with the twilight had appeared swarms of evil little gnats and midges.

"This is the house," said Jonny Land, pulling up the truck in front of a square dwelling.

Laird Carlin's heart sank. It was like the other houses he had seen, a ferroconcrete structure festooned with climbing flower-vines, surrounded by tall, untrimmed trees except on the side that looked down into the twilit valley. Primitive hydroponic tanks gleamed dully beyond the trees.

He followed the lame youngster into a dim, cool living room. It looked like an antique stage set to Carlin, with its ridiculous cloth curtains at the windows, its obsolete krypton light bulbs in the ceiling, its massive furniture that was actually made of wood.

Jonny Land had been making explanations in lowered tones to the two people at the other end of the room. They came forward, a spry old man and a girl.

"This is Gramp Land, my grandfather," Jonny introduced. "And my sister Marn."

The old man looked at Laird Carlin with inquisitive, bright eyes, and his gnarled hand reached for an old-fashioned handshake.

"Come from Canopus, do you?" he chirped. "Well, that's a long way off. I was there once years ago when I followed space. And my grandson Harb has been there lots

of times when he was a star-ship man."

The girl, Marn, looked doubtful and troubled as she murmured a word of greeting to Carlin. He sensed that his coming had disturbed her.

She was a rather small girl, with a thick mop of ash-colored hair carelessly combed back. Her eyes were grave blue. She wore a faded old slack-suit that he thought the most barbaric feminine garment he had seen.

"I hope we can make you comfortable here, Mr. Carlin," she said, troubled. "We've never had any lodger before. I can't understand why Jonny made the suggestion."

A heavy step at the door cut her short. Her look of distress and worry deepened.

"There's my brother Harb, now."

Harb Land was a gangling young giant with a craggy face and slate-colored eyes that looked at Carlin with instant hostility. Jonny had limped forward and was quickly explaining Carlin's presence.

"He's going to live here with us for a while, Harb."

Harb Land's reaction was violent. "Have you gone out of your mind, Jonny?" he flared. "We can't have him here."

Disgusted, Carlin started to turn away. But Jonny Land stopped him with a gesture. There was a quiet, unsuspected strength in his thin brown face as he spoke to his lowering brother.

"He's going to stay, Harb. We'll talk about it later."

Harb Land made no reply, but glared at Carlin. And Carlin felt an unutterable weariness and dislike.

These primitive, backward, suspicious Earth yokels, quarreling over the privilege of staying in their grotesque old house. As though he would stay on their cursed planet one minute if he didn't have to!

"I'm very tired," he said heavily. "If you could show me where the room is, I should like to rest."

Marn uttered an apologetic exclamation. "Oh, I'm sorry! Of course you're tired. Come with me, Mr. Carlin."

She led upstairs. There was no grav-lift, just old-fashioned steps going up a dark hall. And the bedroom on the upper floor to which she took him was as bad as he had expected.

It was clean, of course, spotlessly so. But it was more like a museum exhibit than a sleeping chamber, to Carlin. There were no aerators, just open windows with crude

screens across them. No somnigrav pad, just a high, old-style bed. There wasn't even a video.

Yet the girl made no apologies for it, seemed not to think any necessary.

"We'll bring your bags up after dinner," she said. "It will be soon."

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### CHAPTER III

#### *Old Planet*

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**W**HEN Marn had gone, Carlin lay down wearily on the lumpy, sagging bed. He closed his eyes. The reaction to the long, slow voyage had set in. No doubt about it, he was star-sick all right. Time was when no voyage could have made him feel like this.

But it wasn't the voyage so much as this world to which he had been condemned. How was he going to live here for months, for a whole year maybe?

The sound of an angry voice came up dimly through the twilight, from the lower floor of the house. He recognized Harb Land's angry tones.

"—if Control Operations finds out what we're doing!"

There was a murmur of lower voices, and then the argument seemed to stop. Carlin remembered what he had overheard the red-faced Loesser saying at the spaceport.

What were these Earthmen doing that they were so secretive about? It must be something against the laws by which Control Council governed the galaxy, or they would not fear discovery by Control Operations.

When Carlin went down to dinner, he expected open hostility from the gangling older brother. But Harb Land muttered a curt greeting, his half-civil manner indicating his angry protests had been overridden.

Carlin stared dismayedly at the food set before them. Instead of the clear, colored synthetic jellies and liquids he was used to, the food was served in what seemed barbarically primitive state. Cooked whole vegetables, natural eggs, natural milk—everything rawly natural.

He ate what he could, which was little. His weariness was drugging him, and Harb Land's smothered hostility gave a sense of strain.

Gramp Land carried on most of the con-

versation, questioning Carlin about the far-away star-worlds. Carlin answered wearily.

"Saw a lot of them worlds myself once," the old man said. He added proudly, "Following space runs in my family. My mother was a direct descendant of Gorham Johnson himself."

"Gorham Johnson?" Carlin asked. "Who was he?"

The question was unfortunate.

"What do they teach out in your star-world schools?" Gramp exploded. "Don't you know that Gorham Johnson was the first man ever to travel space? That he was an Earthman, who took off from down in the valley here two thousand years ago?"

Gramp's pride was outraged. Carlin remembered the old galaxy proverb—"Proud as an Earthman." They were all like that, inordinately vain of the fact that their world's people had first conquered space.

"Sorry," he said tiredly. "I remember the name now. Anyway, I had too much cosmic physics to study to spend much time on ancient history."

Gramp still spluttered, but Jonny intervened, questioning Carlin on his work.

"Did you study sub-atomics or just straight dynamics?"

"Sub-atomics," Carlin answered. And, to another question, "Yes, I had electronic mechanics too."

He caught the swift, triumphant glance that Jonny Land shot at his brother. It puzzled him.

"Jonny knows all that stuff," boasted Gramp, his good humor restored. "He's a Cosmic Engineer graduate from Canopus University, too."

Laird Carlin was genuinely surprised. He looked at the quiet, thin-faced youngster.

"You're a Canopus graduate? Why the devil is a man of your training wasting your time here on Earth?"

"I just like Earth," Jonny answered evenly, "and wanted to come back here when my education was finished."

"Oh, sure." Carlin nodded. "But if this world is as outworn as it looks, there's no field here for a CE. You ought to be out at Algol."

"You star-world people are all the same—always advising us to leave Earth!" Harb Land interrupted with suppressed passion. "That's what Control Council keeps harping on as a solution to all our poverty and problems. They keep asking, 'Why don't you

emigrate to other stars?"

Gramp Land shook his head. "We don't leave our planet as lightly as some folks do. No matter how far an Earthman goes, he always comes home."

"Still, you can hardly blame Control Council for giving you good advice," Carlin said, exasperated. "After all, it's your own fault if you foolishly squandered the copper resources of your planet and now lack power."

Harb Land's craggy face darkened. "Yes, we squandered our copper foolishly. We did it twenty centuries ago, when Earth was opening up the whole galaxy to travel. We spent our copper establishing the galactic civilization that's forgotten all about our power-starved world."

"Harb, please!" said Marn in a low voice, distress in her face.

A silence fell, and they finished the dinner without further conversation. But Jonny Land spoke to Carlin before he went upstairs.

"Don't take Harb too seriously. A lot of people here on Earth are so embittered about our lack of power that they're unreasonable."

**C**ARLIN found his bedroom dark. No automatic lights came on when he entered, and he could not find the switch. He gave it up, and got into bed and lay looking heavily out into the night.

Soft wind was stirring the trees around the house. Heavy scent of flowers drifted on it, stirring the window curtains. Down in the valley gleamed the spaceport beacons, and beyond lay a thin rim of glimmering sea over which the quarter-phase shield of Luna was rising.

He felt utterly miserable, homesick, wretched. If he were back at Canopus right now, he would be dancing with Nila in Sun City ballroom, or wandering in Yellow Gardens.

He drifted off to sleep despite himself, in his lumpy bed . . .

Carlin awoke with bright sunrise splashing his face. He reached sleepily for the aerator and refreshment buttons—then remembered.

To his surprise, he was feeling much better. He had slept well in the primitive bed, and fatigue had drained out of him.

Queer, musical notes that he guessed were calls of birds came to his ears. The air that

snapped the curtains was chill now, but pure and sweet, subtly intoxicating.

"They do have finer air on this old world than any aerator can furnish," he thought.

He put on a zipper-suit that was dark brown and rough in weave.

"Going native," he thought with a sour grin, and went downstairs.

Marn Land was the only person he found in the sunny rooms. She still wore those barbaric faded old slacks, but had a red flower in her ashen hair. A little frown of worry in her forehead disappeared as she looked at him.

"You're feeling better, aren't you?" she asked.

"A lot," Carlin admitted. "I'm afraid I was rather rude last night, you know."

"You were tired," she said gravely. "Just sit down. I'll get your breakfast."

It was a new experience to Carlin to sit chatting in a sunny old kitchen while a girl in faded slacks prepared his breakfast on an electrode stove. Instead of punching the refreshment-button for it.

"Jonny and Harb have gone down to the spaceport," she said over her shoulder. "They and a few friends have an old planet-ship there that they're fixing up for a trip to Mercury."

"Mercury?" he said. "Oh, that's the innermost of these planets, isn't it?"

"Yes. Men here on Earth are always going prospecting for copper on its Hot Side. Jonny got up this prospecting expedition."

The breakfast she put before Carlin was of coarse wheaten bread, more of the natural eggs and milk, and a curious brown beverage made from stewing certain dried berries. She informed him its name was coffee. Carlin tried it, found it bitter and unpalatable.

A little surprised by his own action, he ate nearly everything else. The food was coarse, but satisfying enough, and he would have to get used to it if he were to stay here.

"I'll try not to be any trouble to you," he told Marn. "I'm just supposed to take it easy, do anything I want to."

She nodded. "I know. Some of our neighbors had Earth-treatment visitors as lodgers. They all got to like Earth a lot before they left."

Carlin did not voice his pessimism on that point. He went to the door and stood looking out into the sun-bright, flowery yard.

He felt at a loss. It was baffling to find himself without anything to do, no work

crowding up that must be hurried through, no crews of ato-men to supervise in blasting spaceports out of untamed planets.

Marn looked at him understandingly. "You've always been busy, haven't you? Earth must seem slow and dull to you."

Carlin shrugged. "I might as well get used to it. I think I'll take a look around."

"You'll find Gramp fishing up at the north brook if you go that far," Marn called after him as he walked across the yard.

Carlin sauntered past a big, locked ferro-concrete workshop of some kind, and some tall storage sheds, then on past the flat, wide hydroponic tanks that were now loaded with their masses of green growth.

He found a road beyond them that he did not recognize as a road, at first. It was a mere wide track gouged northward along the wooded ridge, the first dirt road that he had ever seen on a civilized world.

"A poor planet, all right," Carlin thought. "Can't even build decent roads."

There were hardly even any ato-fliers in the sky, only an occasional one flitting across the blue vault.

"No wonder these poverty-stricken devils resent the rest of the galaxy," he thought. "I suppose I would too, if it had been my bad luck to be born here."

**T**HE road was crazily illogical, winding westward along the woods-clad ridge in serpentine fashion. It twisted accomodatingly to avoid big boulders, a spring, a small gully.

The woods on either side was deplorably unkempt to Carlin's eyes. Big and small trees jumbled together, saplings choking each other out, dead brush and thorns and vines everywhere. There was even wild life

in the woods, furry rodents scuttling away, hosts of birds.

This sort of thing was what you expected on some unpeopled planet that hadn't yet been pioneered and civilized. But Earth was the oldest human-peopled world in the whole galaxy.

Yet Carlin had to admit that there were certain compensations here. That winelike air was still an experience to him. And walking now came more easily to his muscles here than on any world. It seemed odd to be walking with such perfect ease, without wearing a de-grav.

He could not find the brook Marn had mentioned. He sat down on a log by the roadside, musing on the drowsy, dull quiet of this place. There was not a sound of human activity. Didn't these Earth people ever get bored with the sleepiness of the place?

Carlin found he was still tired. He watched a small, brilliant insect fluttering over a flower near by. Soft wind breathed through the ragged woods, stirring the green leaves and making a dappled, dancing pattern of sunlight on the ground. A distant bird called rustily.

"An old, outworn planet, dreaming," he thought. "These people, all of them, living in its past."

Carlin finally got up stiffly, and lounged back along the road. He was surprised to find that time had passed quickly, that the sun was now at the zenith. And that, somehow, his taut nerves had relaxed.

The big workshop behind the house had its doors open now. He glanced through them and was surprised to see that the cavernous room in there was a fairly well-equipped atomic-engineering laboratory.

[Turn page]

## Many Never Suspect Cause of Backaches

**This Old Treatment Often Brings Happy Relief**

Many sufferers relieve nagging backache quickly, once they discover that the real cause of their trouble may be tired kidneys.

The kidneys are Nature's chief way of taking the excess acids and waste out of the blood. They help most people pass about 3 pints a day.

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Interested, Carlin started toward it. In the center of the big room he had glimpsed a towering, massive machine whose inner mechanism was concealed by a cylindrical metal cover.

"Looks like it might be a big field-generator of some kind," he muttered. "I wonder what it really is?"

There was a violent exclamation as an Earthman came running out from behind the machine to block his entrance.

Carlin recognized the broad red face, angry eyes and stocky figure of Loesser, the man who had argued with Jonny at the spaceport.

"What are you doing here?" Loesser demanded harshly.

Carlin was bewildered by his vehemence. "Why, I just wanted to take a look at this machine."

"I thought so!" blazed Loesser, his eyes raging. "I told Jonny that was why you came here!"

He snatched an object from his jacket pocket. To Carlin's thunderstruck amazement, the object was a stubby atom-pistol that Loesser was furiously leveling at him.

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## CHAPTER IV

### *Mystery Machine*

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**L**AIRD CARLIN was child of a galactic civilization in which violence between men was rare. There was plenty of danger yet, in pioneering new star-worlds, but over the civilized worlds themselves the unchallenged law of the Control Council maintained unbroken order. A man could go a lifetime without ever seeing violence.

The atom-pistol in Loesser's hand and the obvious murderous intention in the man's face stupefied Carlin. He was simply unable to adjust his thinking to the possibility that the enraged Earthman before him meant to blast him down.

"Why, what's the matter?" he began, puzzled and stunned.

He knew later how near he had been to death. At the moment, he so little recognized it that he felt no relief at the interruption that came now. Harb and Jonny Land came running forward from the cavernous interior of the workshop.

"Loesser, put that gun down!" snapped Jonny.

Loesser turned violently. "This fellow was spying on us! I saw him at the door!"

Harb Land's craggy face darkened ominously.

"I warned you what might happen," he said harshly to his brother.

"Is this man crazy?" Laird Carlin demanded bewilderedly of Jonny.

The lame youngster limped quickly forward. "Get back to work," he told the other two briefly. "Carlin, I'm sorry about this. I'll explain."

He walked beside Carlin toward the house. It was not until later that Carlin realized how deftly and unobtrusively he had been steered away from the workshop.

"Harb and Loesser and I, and a few others, are planning an expedition to Mercury to prospect for copper," Jonny was explaining. "In that ship you saw down at the spaceport. We've devised a new metal-finder of the radiolocator type, with which we hope to be able to locate new copper deposits. That's the machine in the workshop.

"We've maintained a certain secrecy about it," he went on, "because naturally we don't want other prospectors stealing the idea of our new finder and beating us to it. And I'm afraid Loesser thought you were spying on us. People here are always a little suspicious of strangers."

"So I've noticed," Carlin answered dryly. "This is the first world in the galaxy where I've ever felt completely unwelcome."

"Oh, I wouldn't say that," replied the other. "But put yourself in our place, Carlin. Figure how you would feel if you were an Earthman, your world starved for power because its copper was spent to establish a galactic civilization that now neglects it."

Jonny's thin brown face was earnest, his blue eyes watching Carlin as though eager to convince him. Carlin shook his head.

"I can see your problem in lacking copper," he said. "But the remedy for it is so simple. Nine-tenths of you should emigrate to other, better worlds as the Control Council advised."

Jonny smiled. "There you come up against the obstinacy of my people. We've an older planetary tradition, a deeper, more ancient love for our world, than any other people in the galaxy."

"I think you people live too much in the past," Carlin answered frankly. "But it's none of my business. Anyway, I hope your expedition brings home copper."

"Thanks," Jonny said softly. "I think we have a good chance."

Carlin went back to the veranda of the old house and sat there pondering. Something about Jonny's explanation had been vaguely unsatisfying.

To his trained eyes, the glimpse he had had of that towering machine had not suggested any metal-finding device. There had somehow been a suggestion in its half-glimpsed bulk of something quite different; something vaguely disturbing, almost menacing.

"The devil, I must have knots in my subconscious to start getting premonitions like that," Carlin swore. "The poor devils are just secretive about their plans because everyone else here is that way."

He lounged boredly around the house during the hot, sleepy afternoon. There was no one to talk to, for the brothers stayed out in their workshop and Marn was out tending the big hydroponic tanks.

He tinkered with the old video set in the living room but the only stations he could get were local Earth ones, and lectures on hydroponics and gossip about unknown people didn't interest him.

He finally gave up and stretched out on the veranda, staring sleepily down into the green cup of the valley and cursing the psychotherapist whose insane idea had sent him here to die of boredom. He dozed until he was awakened by the sputter of an arriving ato-truck.

**T**HERE CONTAINED three lanky young men, tall Earthmen who went back to the workshop without stopping at the house. The other partners in the prospecting expedition, Carlin supposed sleepily.

Again he felt that queer sense of something threatening, that vague premonition that had clung to him ever since he glanced into the workshop. If only he could remember what that machine reminded him of.

Days passed and Carlin still could not remember that, though his disturbing doubt persisted. There was no chance of another look into the workshop for it was always locked except when Jonny and Harb and their half-dozen partners worked in it.

"The trouble with me," Carlin told himself ironically, "is that I haven't anything else to occupy my mind on this blamed world."

Yet Carlin's first repelled dislike of Earth

had faded much by now. The crudities of existence, the lack of civilized conveniences, no longer bothered him so much. He had to admit that whether or not Earth-treatment was benefiting his twisted subconscious, this sleepy old planet was a fine place for a rest.

He spent his mornings idly rambling the twisting roads, his afternoons lounging on the cool, shady veranda of the old house, or helping Marn tend the hydroponic tanks. Or fishing with Gramp in the foaming brook below the ridge, while that oldster told innumerable tales of the old days when he had followed space.

Neighbors, hydroponic farmers up and down the valley, dropped in at the Land house in the evenings. Carlin did not intrude, and gradually their first stiff suspicion of him abated and they talked freely before him. The talk always swung to the paramount consideration on this power-starved planet—the need for copper. It made Carlin feel a little guilty to remember how much of it was wasted on other worlds.

"I have to drive down to the spaceport for Jonny, to get some instruments he left in the ship," Marn said to him after dinner one evening. "Do you want to go along?"

Carlin grinned. "I've legged it so much lately that riding anywhere would be a change."

The old ato-truck swung down the twisting road in the blaring sunset. The heavens behind them were a glory of fusing colors as the red ball of Sol dipped majestically toward the horizon.

Despite his appreciation of that wild splendor, Carlin felt a vague uneasiness. Why should the loveliness of the evening bring disturbing recollection of Jonny Land's puzzling machine into his mind?

"You're getting to like it better here, aren't you?" asked Marn.

She was usually so silent with him that Carlin glanced quickly at her profile as she drove. It struck him with surprise that she had a certain beauty. Her thick mop of ashen hair, and firm-chinned face, and small, competent hands grasping the wheel, were oddly attractive. It wasn't the fine-edged, shimmering beauty that Nila had, but it had appeal.

"Yes, I must be getting more accustomed to it," he answered her question. "And it's not as provincial as I thought. Nearly every man you meet here has been to space some time or other."

"Every Earth boy runs away to space sooner or later," she said, and smiled. "Following space is in our blood. And our planet's so poor now that it's the only way most of our men can make a living." She added, "Some of our men never come back. My father didn't. And my mother died, when he was lost."

It was dusk when they reached the space-port. As he walked with the girl along its edge toward her brothers' ship, she drew him aside toward a tall shaft that loomed up spectrally in the twilight.

"This is where the first Earthman went away to space," she told him.

He looked at the deeply engraved legend on the pedestal of the soaring column. It was the Monument to the Space-Pioneers.

"Gorham Johnson took off in his first flight from this very spot," Marn said.

Carlin strained his eyes in the dusk to read the roll of names and dates engraved on the pedestal.

Gorham Johnson, 1991  
Mark Carew, 1998  
Jan Wenzi, 2006  
John North, 2012

Names of the men who long ago had first dared space, the men who had first followed a dream to the nearby planets that then had seemed so far, the men who had first hurtled starward and opened up the galaxy.

"Lord, more than two thousand years ago," Carlin murmured, "Queer little ships they must have had."

His imagination was touched. This simple roll of names of men long dead somehow brought it all close to him for the first time.

**T**HOSE old, pathetically flimsy ships, the enormous courage of those men to whom space was all one unknown abyss. He began to understand why tourists came from all the galaxy to see these mementoes.

"They and their little ships started it all, the whole galactic civilization, the vast human empire," he said musingly.

Marn was looking up at the spire towering in the dusk.

"People criticize us Earthmen for our pride. But this is why we're proud. We're the people who opened up the frontiers of the Universe."

Carlin nodded thoughtfully. "You've a great heritage. But perhaps you remember it too well. This is the present, not the past."

"You're like all the others, you think Earth's history is over," Marn said defiantly. "You'll find out differently. Earthmen will open up the last frontier of all—" She checked herself suddenly, and then said, crestfallen, "I'm sorry. I didn't mean to quarrel."

Carlin wanted to ask what she had meant, but Marn started on again through the deepening darkness toward her brother's ship.

He walked with her into the battered planet-cruiser and looked around curiously. It was a medium craft designed for a minimum crew, with oversize cyclotrons and propulsion-wave equipment, drive-plates fore and aft, and an unusually heavy set of heat-screen generators.

"The Hot Side of Mercury is terrible," Marn said when she saw him glancing at the generators. "You need the heaviest heat-screens you can get to prospect there."

Amidships, Carlin noticed a big, empty round room or hold. There was nothing in it but a skeleton of girders designed to hold something over a sliding plate in the floor.

He remembered Jonny's big machine in the workshop. It would fit into this frame. He would have liked to make further inspection but Marn had found the instruments she had come after.

As they emerged from the ship, a lean, uniformed figure in the dusk greeted them in a pleasant voice.

"Hello, Marn. I saw you walking across the tarmac. How is Jonny coming with his plans?"

It was a young man in the gray uniform of Control Operations, the agency of law and order throughout the galaxy. He bowed to Carlin.

"I'm Ross Floring, Control Operations commander here. You're the Earth-treatment chap staying with the Lands? Glad to meet you."

Floring was not more than thirty, an alert, clean-cut, likable young man. He turned back to Marn.

"How soon are Jonny and his friends planning to take off for Mercury?"

Marn looked uncomfortable. "I don't know, Ross. They have some more preparations to make, they say."

Carlin somehow sensed a strain in the atmosphere. There was an earnestness in Floring's manner that was not accounted for by his words.

"I like Jonny a lot, Marn," he said seri-

ously. "You know that. I'd hate to see him have trouble on this expedition."

Marn seemed to evade his meaning. "Jonny won't have any trouble. A trip to Mercury is nothing for Harb and him."

"I sincerely hope he won't," Floring said quietly. "Copper isn't worth risking too much for. Tell him I said so, will you? And tell him I'm coming up some day to talk with him."

Marn was obviously eager to get away. Carlin, puzzled, followed her.

"I'll see you again, Mr. Carlin," Floring called after him pleasantly. "We can have a talk about home. Yes, I come from Canopus too."

It wasn't until they were in the auto-truck driving homeward that Carlin realized he hadn't told Floring his name or origin. Why would Control Operations have taken the trouble to check up on that?

"Floring seemed like a nice chap," he told Marn. The girl nodded, troubled.

"He is—one of the best," she said. "And he likes Jonny. But he'd forget everything else for his duty."

She was, obviously, thinking aloud rather than answering Carlin. He wondered again about that queer feeling of strain. It had sounded almost as though Floring were warning her.

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## CHAPTER V

### *Desperate Play*

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THE truck wheezed and groaned up the dark old road to the ridge. In the velvet black skies, the stars were chains of glittering light. Vega, Arcturus, Altair—they looked far away.

The house was dark when Marn stopped the truck behind it, though there were still lights out in the workshop. There was a solemn, buzzing hush about the starlit summer night.

"I have to take these things back to Jonny," said the girl.

"Marn, what are your brothers really planning?" Carlin asked her. "Does Floring know?"

She twisted uncomfortably. "Jonny told you all about their plans himself, didn't he?"

She was such a poor liar, she was so oddly appealing a figure in the starlight as she

looked up at him with troubled white face, that sudden impulse made Carlin bend and kiss her.

Her small body was firm and warm in his hands and there was a breathlessness about her cool lips. But she did not move.

He looked down at her. "You don't mind, do you?" he asked.

"No, I don't mind," Marn said, her voice toneless. "It's all right for a star-world visitor to have a little flirtation with an Earth girl before he goes away, isn't it?"

"But it isn't that!" Carlin started to protest, and then stopped.

After all, what was it but that? What could it be but that?

"It's all right, but please don't again," Marn said quietly. "Good night, Laird."

He went into the house feeling depressed and thoughtful. He wished now that he hadn't had that impulse. Marn wasn't the sophisticated sort.

Lying in his bed and looking out the window at the distant spaceport beacons down in the valley, Carlin heard her come in and retire. Apparently Jonny and Harb were still working.

What were they working at really? Why had Floring been so grave in his veiled warning?

"Oh, the devil, it's none of my business," Carlin yawned. "There isn't much in this little system for them to get into trouble about. Nothing but eight or nine small planets and one medium sun."

Carlin suddenly sat bolt upright in bed as his mind dwelt on that last thought.

"The Sun? Good glory, that's what they're up to! It must be! Sun-mining!"

He was dismayed, horrified by the sudden flash of revelation. The disquieting mystery that had puzzled him since his first coming here suddenly shaped clearly as pieces fell together in his mind.

"They wouldn't be so crazy as to try it, surely! Yet it all fits together—the heat-screens on their ship, the secrecy about it all. And that machine I saw could be a big magnetic dredge!"

Sun-mining! Most strictly forbidden of enterprises, banned by the Control Council for years since the first disastrous attempts at it had almost wrecked certain planetary systems.

Visions of frightening possibilities crowded Carlin's mind, of a desperately reckless attempt unchaining catastrophe on the inner

planets of this little system.

"But Jonny Land wouldn't try it! He's a CE, he knows what would happen."

Carlin could not convince himself. He remembered only too clearly Jonny's intense obsession with Earth's copper shortage, his quiet determination.

And Floring must suspect something of the truth! That was what had made the Control Officer give his grave hinted warning.

Carlin got up and feverishly dressed. He had to find out the truth, now, at once. If the Land brothers and their friends were really bent on such a mad enterprise, it would have to be stopped even if it meant his informing Control Operations.

"If I could get one good look at the inside of that machine of theirs, I could soon tell whether it's really a magnetic dredge," he thought.

He went quietly down through the dark house and out into the starlight. Light and sounds of activity still came from the workshop.

Carlin crept toward it. He hated this spying. But he had to know. He couldn't permit a crazy attempt to unloose disaster here.

The workshop was closed, and there were no windows. But as he stood irresolute, the big front doors opened and Loesser and two other young Earthmen came out, wearily mopping their brows.

"We'll be back tomorrow, Jonny," Loesser called back into the building. "Ought to finish her up in a few days now."

The three strode wearily toward their atom-truck and drove away. The doors remained open for the moment.

**C**ARLIN stepped forward and from his vantage in the dark peered into the big lighted room. Jonny and Harb Land were putting back the metal cover on the central mechanism, before they too quit work.

One glance at the interior of that machine was enough for Carlin's trained eyes. Those big magnetic-current coils, that massive beam-head, that battery of Markheim filters —he had been right, they spelled disaster.

A small, hard object prodded Carlin's back and a voice throbbing with anger spoke in his ear.

"This is an atom-pistol. Raise your hands. I don't want to harm you."

"Marn!" he exclaimed, stunned.

"Don't turn!" warned the girl. Her voice was choked with wrath. "I heard you get

up and I followed you out here. You are a spy!"

Carlin was so stunned with horror by his discovery of the brothers' catastrophic plans, that he reacted by sheer, desperate impulse to the weapon in his back. He swung around and grabbed for the atom-pistol.

It would have been suicidal, had another than Marn been holding the weapon. But Marn, as much a stranger as he to deadly violence, let her finger hesitate on the trigger too long. Perhaps she would not have fired in any case. Pondering it later, he was not sure.

What happened was that he got his hand on the slim pistol and snatched it out of her grasp before her hesitation ended. Marn, her face white, called frantically:

"Harb! Jonny!"

The two brothers came running out from the rear of the lighted workshop, Harb's craggy face dark and deadly as he saw them.

Carlin jumped back, leveled the weapon he had just taken from the girl.

"Get back!" he ordered hoarsely. And as Harb Land, blindly raging, came on: "I don't want to kill anybody!"

Jonny's voice rang command. The lame youngster's thin brown face was set, but he had not lost calm.

"Harb, stop!"

The thing froze into a queer sort of tableau as Harb Land pulled up and stood there, his giant figure quivering with wrath, his big fists clenched as he glared at Carlin.

"I told you," Harb said thickly over his shoulder to his brother. "I told you what would happen if we took him in."

Marn had run toward them, her face pale and stricken.

"It's my fault, Jonny," she said despairingly. "I heard him come out and followed him, but let him take my gun instead of shooting."

"Quiet, Marn," soothed Jonny. "It's going to be all right. Carlin just doesn't understand."

The lame youngster, in this taut moment of strain, was suddenly the biggest of them, the dominating personality here.

"I understand, all right," Carlin said hotly. "I guessed it tonight, and one look at that magnetic dredge confirmed my guess." His voice crackled with the rising wrath he felt. "Going to Mercury prospecting, were you? You never had any such plan. You and your partners have been getting ready

to attempt sun-mining."

Jonny's eyes and voice were calm as he said:

"Carlin, Earth's starved for power. You've seen for yourself. To get the power that will revive our world, we've got to have copper. And the copper in our planets was exhausted long ago. But there's still billions of tons of copper in our System, in one place. The Sun. It's there in hot gases, more copper than Earth and our sister planets will need for millenniums to come. It's our only possible source of copper and we intend to tap it."

"You and the others have brooded so long over your need for copper that you've gone crazy!" Carlin said, his voice whipped with anger.

"What's crazy about our using the copper of the Sun for our planet?" Jonny asked evenly.

"You, a CE, ask me that?" cried Carlin. "You know as well as I do that sun-mining brings catastrophe! Oh, you can get close enough to the Sun in your ship, I know. You can suck up all the gaseous copper you want from it, with that magnetic dredge. But what happens on your Sun when you do it?

"You know as well as I what would happen, what has always happened when it was tried. The suction creates a whirl in the solar surface, a tiny Sun-spot that grows and grows until it's grown into a terrific solar typhoon that pours disastrous increased heat and electric force onto its planets. You know it's happened every time Sun-mining was ever tried, and that that's why Control Council forbids Sun-mining."

Jonny Land nodded calmly. "I know all that. But suppose I've found a way to do Sun-mining without starting Sun-spots?"

**D**ISBELIEF hardened Carlin's voice.

"You haven't. Nobody ever has. There just isn't any way—suck out gases from any point on the Sun and you lower pressure at that point, and lowered pressure automatically starts a whirl."

"Carlin, I *have* found such a way! I tell you, with it we can suck unlimited copper from the Sun without creating one tiny Sun-spot!"

Laird Carlin stared. "You're telling me that, because you know I'm going to report your plans to Control Operations."

"You wouldn't do that!" cried Marn, incredulously.

Carlin nodded firmly. "I don't want to but

I've got to. I can't let a bunch of crazy men bring on a disaster that might scorch life itself off your inner planets."

Jonny Land's thin face flared irritable emotion as he limped forward unheeding of the gun in Carlin's hand.

"Carlin, man, be reasonable! Why do you suppose I had you come here and live with us? It was because you're a CE and I'll need another trained engineer's help in operating this thing. And do you suppose I ever thought I could get your help unless I could convince you I've found the way to safe Sun-mining? I can convince you, Carlin!"

Carlin felt the conviction in Jonny's voice. What the crippled young man said did logically explain something otherwise puzzling—why they had taken him into their home when their work was so secret.

He remembered now that it was not until Jonny Land had learned he was a CE, on his first arrival on Earth, that the young Earthman had shown interest and offered him lodgings.

"All I ask," Jonny was saying earnestly, "is that you give me a chance to explain our plans to you. I know I can convince you that we can mine the Sun without the slightest danger of disaster."

"If that's so," Carlin demanded skeptically, "why didn't you convince the Control Council of that, and get permission for Sun-mining instead of trying to do all this in secret?"

"Carlin, I did try to convince the Council," Jonny Land declared. "I made one petition to them after another, giving them full details of my plan. But Council isn't composed of engineers. And the popular prejudice against Sun-mining, due to those past disasters, is so strong that Council refused us permission to make the attempt."

"That's why Ross Floring and the others down at Control Operations watch my brothers so closely, Laird," Marn added quickly. "They know about our petitions, and Floring suspects that Jonny is going to try this thing anyway."

It all fitted together logically, Carlin had to admit. Yet he still stood irresolute, the atom-gun in his hand.

"Here's a proposition, Carlin," said Jonny. "I'll explain every detail of our plan to you in the morning. If you don't admit then that the plan's completely without danger of disaster, I'll let you go and tell everything to Floring. I give you my word on it."

Carlin looked at him doubtfully. "Jonny,

you'd break your word as cheerfully as your neck to carry out your purpose for Earth."

Jonny Land grimed crookedly. "That's true. But on the other hand, I'm still hoping for your help in this project. That's why I want to convince you, and that's the best guarantee I can give you."

Carlin shrugged, but he slowly lowered the weapon.

"I can tell you right now that I'll have no part in any such illegal venture," he said flatly. "But I'm willing to hear your explanation."

"Well," Jonny said, with a tired sigh, "we've had enough dramatics for one evening. Harb, lock up the workshop and we'll all turn in for tonight."

Carlin looked a little awkwardly at Marn as he handed her back the atom-pistol.

"I'm sorry if I appear ungrateful for your hospitality," he told her. "It's just that I can't stand by and do nothing if a crazy attempt threatens to bring on catastrophe."

"I know," Marn said soberly, and there was no hostility in her face. "But you'll find out that Jonny knows what he's doing."

Out of the darkness behind them spoke a shrill voice that made Laird Carlin swing around in astonishment.

"Well, I'm blamed glad you people quit arguin' for tonight, anyway. It's time all decent folks was in bed."

Gramp Land stood back there in the dark where he had apparently been standing for some time. There was a grin on his withered face as he lowered the heavy atom-gun he had been holding.

"Sure got tired holdin' this thing aimed at your back, Mr. Carlin," he chuckled.

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## CHAPTER VI

*"You Owe a Chance to Earth!"*

---

**D**OUTS assailed Carlin almost as soon as he retired. He could not sleep, the rest of that night.

Had he been childish to let Jonny persuade him into giving the plan a hearing? Jonny was sincere enough, but he was a fanatic on this one subject of securing power for Earth.

The recklessness of Earthmen was proverbial. These men, made desperate by long brooding over the poverty of their world, might think little of the danger of provoking

solar catastrophe in their obsessed desire to secure copper.

Carlin chilled. He remembered what had happened years ago at the star Mizar when Sun-mining had been attempted. The suck of magnetic dredges swiftly creating a whirl in the star's surface gases, a Sun-spot maelstrom that had expanded with disastrous swiftness. And then the engulfing of the mining ships in the sudden outpour of increased heat, the scorching of inner planets that wreaked ruin before the spots subsided.

It had been the same later at Polaris, and at Delta Gemini. No wonder that such a popular wrath against Sun-mining had arisen that Control Council had strictly forbidden further attempts! Man's science, great as it was, was not yet great enough to dare tampering with stars.

Yet he could see, too, how these Earthmen would inevitably turn their thoughts to Sun-mining. There was not any copper left in their System except in one body—their Sun. And that had limitless amounts of the power-metal, in vaporized form. No wonder they had been led into the plan to tap the metal of their Sun.

Carlin dozed before daybreak, but woke with the sunrise and went down, to find the others already at breakfast. They greeted him with a word, all but Harb Land who maintained a stony, dangerous silence.

"We'll go out and show you our work, as soon as you have breakfast," Jonny said quietly.

Gramp Land was the only one in good spirits. The old man twitted Carlin.

"It's sure a good thing you got reasonable last night. I would have hated to blast you."

Marn smiled slightly. "You wouldn't have done it. You're too chicken-hearted even to kill a fly."

"Ho, what are you talking about?" exclaimed Gramp indignantly. "When I was young, they called me the toughest Earthman in space."

Carlin walked silently out to the workshop with Harb and Jonny. The lame youngster opened the building, and then gestured toward the tall, cylindrical machine.

"Take a look for yourself, first," he invited.

Carlin scanned the mechanism with trained eyes. Magnetic dredges were a little out of his line, yet the principle of the mechanism was clear enough.

"You understand the basic idea of Sun-

mining?" Jonny was saying. "A ship approaches the photosphere or visible surface of the Sun as closely as possible, protected by heavy heat-screens from the radiation. The magnetic dredge is then turned on. The dredge generates a high-powered magnetic field concentrated into a beam. That beam drives down into the swirling super-hot gases of the solar surface.

"Those gases consist of dozens of metals and other elements in vaporized form—iron, copper, sodium, calcium and so on, all mixed together. The beam sucks a column of those solar gases up to the ship. For its magnetic pull powerfully attracts the iron vapor in the mixture, and so the whole mixture is rapidly sucked upward."

He pointed to the massive flared nozzles in the downward projector-face of the great machine.

"The gases are sucked in there, through Markheim filters which can be set to screen out the atoms of any desired element. The copper gases are screened out, solidified by cooling, and stored. The other gases go on through the filters."

Carlin nodded curtly. "And those unwanted gases are ejected into space, and more of the solar mixture continuously drawn up, and so on until your ship is filled with copper. Yes, it's the same scheme that was used by the Mizar and Polaris Sun-miners. And it will have exactly the same result! Sucking gases out of any point in the solar surface will lower pressure at that point. And lowered pressure at any point of the photosphere instantly and inevitably starts a whirl of gases, a growing maelstrom or Sun-spot!"

Jonny Land shook his head. "Carlin, you're jumping to conclusions. This dredge does not simply eject its unwanted gases into space like former designs. Take a look at that beam-head more closely."

**C**ARLIN looked. And he was puzzled, after a brief inspection of the curious concentric construction of the beam-head.

"I don't get it. It looks like you have two circular beam-heads, one inside the other."

"That," said Jonny, "is the secret of my scheme. Lowered pressure in the solar surface at the point of suction creates a whirl, a Sun-spot. But suppose we can suck up gases without lowering pressure?"

Carlin stared. "How?"

"The two beam-heads," reminded the lame youngster eagerly. "The inner one is the one

that beams down a positive magnetic pull to suck up solar vapors. The outer one is designed to use a simultaneous negative magnetism to shoot the unwanted vapors back down into the Sun."

The whole meaning of the explanation flashed over Carlin, and the possibilities of it dawned across his brain.

He said nothing, but crawled under the towering dredge and for minutes inspected inside and outside of the beam-head, feed-tubes and cut-offs. He finally came back out to them.

"Well?" challenged Jonny Land.

Carlin bit his lip. "I've got to admit your scheme looks practical enough. You should be able to suck up gases without any Sun-spotting effect, by using that continuous kickback. But—"

"But what?" demanded Harb Land, frowning.

Carlin shook his head. "Blast it, I can't see why the Council would turn down your petition if this is as workable as it seems."

Jonny shrugged. "I told you why. Control Council contains the finest statesmen in the galaxy. Statesmen, not engineers. They admitted their experts' reports on this showed it theoretically workable. But they said it was too dangerous to take a chance on theory when it comes to tampering with suns. We don't need copper that badly, they said."

His fists clenched in sudden passion. "We don't need copper! The galaxy as a whole doesn't need it, they meant. And what does it matter if one little world called Earth is fading and dying for lack of the copper it squandered to open up the galaxy? What does it matter, except to Earthmen?"

It was the first time that Carlin had ever seen Jonny Land give way to emotion. The superhuman strain that drove and dominated this lame, thin youngster for a moment flared hot and anguished on his face. Then his narrow shoulders sagged. He stood looking at the towering dredge with brooding eyes, before turning to Carlin.

"Carlin," he said then, "there's only one way to prove to the Council this way of Sun-mining is safe—and that's by doing it! That's what we're going to do. We're going to the Sun and come back with a shipload of copper. They'll see then that it's wholly safe. They'll have to give permission then. And a fleet of ships equipped with dredges can suck enough copper from the Sun to give Earth

all the power it needs hereafter.

"You've seen the dredge and you know our plans. You've seen enough of Earth to know how much our success would mean to this world. Carlin, do you still want to tell Floring about this?"

"You couldn't!" exclaimed Harb Land harshly. "You couldn't destroy all the hope that's left for our world's people. You—all you star-world people—you owe this chance to Earth!"

Carlin stood there, torn by conflicting feelings. Strong among them was his intense admiration as an engineer for the ingenuity and daring of Jonny Land's solution to the problem.

But there were other things to consider. There was the duty he and every citizen had to support the Control Council. That support was what kept galactic civilization going. Yet these Earthmen, this little band fighting so fiercely for their ancient, worn world would flout it.

"Jonny!" came Marn's sharp cry from outside. "Jonny!"

"Something's wrong!" Jonny exclaimed, limping hastily forward.

They hurried out into the sunlight. Marn was running toward them and at the same moment they heard the drumming of an approaching ato-car.

"It's Ross Floring coming here!" Marn panted. "I recognized his car coming up the hill!"

Harb uttered a fierce exclamation, but Jonny cut in quickly:

"He's only coming up here to look around. He suspects what we're up to, but he can't be sure. Don't show any excitement."

Harb gestured fiercely toward Carlin. "But if he says anything, Floring will know."

A pleasant voice hailed them. Ross Floring, lean in his gray uniform, drove up behind the house and climbed out of his ato-car.

"Hello, folks," he greeted. "Thought I'd come up and see you. Jonny, I haven't seen you for weeks. Every time you come down to the spaceport, you spend all your time buried in that ship."

Jonny smiled. "It's keeping us pretty busy, getting ready."

**I**AIRD CARLIN sensed genuine liking between the Control Operations officer and the lame young engineer. Yet there was unspoken tension too. It showed behind Jon-

ny's cool smile and Floring's pleasant eyes.

Floring was looking past them, through the open doors of the workshop at the towering magnetic dredge.

"Is that your new metal-finding dingus, Jonny? The thing you're going to use to locate copper on Mercury?"

He stepped toward it. Harb Land made a violent movement forward, but a flat look from his brother stopped him.

"Yes, that's it," Jonny said. "Want to look it over, Ross?"

Floring stood, cocking his head at the towering machine. He laughed at the question.

"Jonny, you know I'm no engineer. A thing like this is beyond me." He turned toward Carlin. "But Mr. Carlin, you're a CE. What do you think of this new metal-finding device of Jonny's?"

Breathless silence held the group for a moment. Floring's face was unmoved, pleasant, but his purpose was obvious now. Knowing that Carlin had come to Earth merely as an Earth-treatment case, he was counting on Carlin's unbiased truthfulness.

Carlin felt their eyes on him. Now was the time, he knew, to play the part of a good galactic citizen and inform Floring just what was going on. It was his duty to do it.

But he couldn't! He couldn't betray the last desperate hope of a gallant old planet's people in their struggle against destiny! He had known he couldn't, from the time Floring had first appeared. He spoke as casually as he could.

"Yes, I've looked it over. It's one of the most ingenious metal-finders I've ever seen."

Carlin felt a queer relief that was almost happiness, as he spoke. For he knew now that he could never have obstructed these people in their brave, desperate struggle to revive their planet.

But Ross Floring looked astounded. A little blank frown of surprise came into his face and he stared steadily at Carlin.

"Then you approve of Jonny's plans?" he said quietly, "But, of course, I might have known that he'd convince you."

There was double meaning to the Control officer's words, clear to all of them. Yet they all ignored it.

Floring was temporarily defeated. He couldn't take action without expert opinion that the machine before him was for Sun-mining. He had expected such an opinion from Carlin, and had been disappointed.

But he was not completely frustrated.

Carlin found out now how thorough and resourceful was this pleasant young officer.

"It would be a shame, Jonny," Floring remarked casually, "if you should run into disaster on this trip and the design of your new apparatus be lost. A metal-finder like this is too valuable to lose."

They were momentarily puzzled by the comment. But in the next moment, Floring showed what he had in mind. He drew from his jacket pocket a tiny tri-dimen camera, stepped close to the towering dredge, and before anyone could prevent it had snapped a half-dozen pictures of its interior mechanism.

Harb Land started forward with a smothered oath. But it was too late. Floring was already pocketing the camera.

"I'll keep these films," he said calmly. "If your machine should ever be lost, the design of it will be preserved this way."

"You can't keep those films!" Harb Land exclaimed angrily. "You've no right!"

"You surely don't think I would steal the design from you?" Floring said, with a look of surprise.

"It isn't that," Harb protested. "But—"

"But what?" the officer asked calmly.

Harb was silent, his craggy face a mixture of emotions as he looked appealingly at Jonny.

Carlin understood Floring's cleverness. They could not protest the films without giving the real reason for their protest, and that they could not do.

"It's all right for him to keep those pictures, Harb," Jonny said quietly.

Floring turned, bidding a pleasant farewell.

"I'll be seeing you again soon," he promised.

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## CHAPTER VII

### *Last Frontier*

---

**A**S SOON as Floring's ato-car had purred away, the little group stood in the sunlight outside the workshop, in stricken silence.

Carlin put into words what was in all their minds.

"Jonny, you know why he took those pictures! He'll telephoto them to Canopus headquarters to be examined by engineer experts,

and they'll send back word that the machine is a magnetic dredge for Sun-mining!"

Jonny nodded. "Yes, of course. Floring has suspected our plans all along, and now he's going to make sure."

"And when word comes back from Canopus, he'll seize our dredge and ship to stop our expedition!" groaned Harb.

"I know that," Jonny Land said, as his blue eyes swept them. "But it will take fourteen or fifteen hours before he gets that report back. Before that time ends, we've got to be on our way to the Sun!"

Laird Carlin felt a shock of astonishment, but before he could comment, Jonny was speaking swiftly on.

"It's our only chance now—to get away before Floring receives the proof that will authorize him to stop us! The dredge here is almost finished. If we can install it in the 'Phoenix' and take off tonight, we'll have our chance to prove to the galaxy that Sun-mining can be safe."

"Install the dredge tonight?" cried Harb Land. The gangling giant's face was sick with anxiety. "Jonny, we can't do it! Not that soon."

"We've got to!" Jonny's voice cut like a steel rapier. "Harb, you go get Loesser and Vito and the other boys. Have them bring the big truck with them. If we work hard enough, we should be able to have the dredge ready to roll by dark. Once we get it into the 'Phoenix', we can take off and complete installation in space."

"You can't do it," groaned his brother. "You know you figured on taking a week yet for that installation."

Carlin stepped forward. He had long ago reached his decision. He had reached it in that moment when he had answered Floring.

"I'm a CE, you know," he reminded. "I can help a lot in that installation."

Marn stared at him, amazement and dawning gladness in her eyes. And Harb Land's tortured face turned haggardly on Carlin.

"You'd do that? You'd help us? By heaven, if you would, we might make it!"

Jonny's brilliant blue eyes bored Carlin's face.

"Carlin, I was hoping for this. I knew from the first I'd need another engineer's help in installing and operating the dredge. I brought you home because I was hoping I could enlist your aid before we started on the expedition. But all the same, I've got to warn you. We're directly bucking a Control Council

order. You can lose your certificate and go to Rigel prison, even if our plan succeeds. And if it doesn't succeed, it may mean perishing with us. And after all, Earth isn't your world."

"Who the devil is doing anything for Earth?" Carlin retorted. "This old planet of yours means nothing to me either way."

"Laird, are you so sure of that?" Marn asked him, her eyes very bright.

"Do we have to get emotional?" Carlin asked roughly. "I'm an engineer, and this is the biggest engineering experiment to be tried for centuries. Don't you think I want to be in on it?" He added crushingly, "And as for my getting mixed up in the blame, I'm already blasted well mixed in it. When I denied to Floring that this was a magnetic dredge, I implicated myself right there in the whole business. I've got to make it succeed, now."

Harb Land was already running toward his truck. Jonny shot sharp orders at his sister.

"Marn, I want you and Gramp to watch the road this afternoon. Floring might come back. Carlin, you and I haven't a moment to lose."

Carlin strode after the limping youngster into the workshop, and Jonny there rapidly explained what remained to be done.

"The kickback feed-pipes to the beam-head have to be hooked up, the cooling coils to solidify the copper are not yet in place, and the whole dredge has to be fastened in its frame so it'll be ready to swing aboard the truck tonight."

Carlin was appalled by the amount of work that remained, for two pairs of hands. But Jonny added an encouraging qualification.

"Loesser and Harb and the others can help in the ato-welding and cable work if we set it up for them. They're all veteran space-men and know how to handle ordinary tools."

Carlin plunged into the work with Jonny. But as they toiled to set up the coils and feed-pipes of the massive mechanism, an inward agnosticism at what he was doing oppressed Carlin's mind.

**W**HY was he doing it, breaking Control law and endangering his certificate and even his liberty? Why under heaven should he be sharing the risks of these men for a planet he hadn't even seen until a few weeks ago?

"I must still be star-sick, unstable," he

thought dismally. "Or I'd never have got mixed up in this mad business. Sun-mining!"

Blind reaction was dominating him. Curse it, he wasn't the type to join Quixotic forlorn hopes. He was Laird Carlin, sober, hard-working engineer, who ought right now to be far across the galaxy at the job to which he belonged.

And all the time Carlin's mind spun miserably to this whirl of self-reproach and foreboding, he was working with Jonny at topmost speed, squeezing into the frame of the great dredge where the lame youngster could not go, fastening Veer clamps, hacking self-sealing leads to the flat Markheim filters.

The sound of ato-trucks rocked the noon air, and Harb Land came running heavily into the workshop.

"I got the others—Loesser's bringing in the big truck now," panted Harb. "What do you want us to do, Jonny?"

Loesser, and Vito, and the other four young Earthmen who came hastening after Harb were dominated by excitement. Loesser's broad red face was shining with emotion as he came up to Carlin.

"I want to apologize. I never thought any star-world stranger would come in with us and help us."

"Save it, and get the welders on those rear feed-pipes," Carlin retorted. "Get in here—I'll show you."

Through the hot afternoon hours, the hiss of ato-welders and reek of fusing metal stifled the work-shop.

Dripping with perspiration, stiff from cramped postures, Carlin worked on inside the great dredge.

And all those hours, in rhythm with the welders' hiss and the clang of wrenches, his thoughts beat a mocking tempo through his brain.

"All this, for no reason! For somebody else's world, a world that ought to have been evacuated long ago! Even if it succeeds, you win nothing. And if it fails, the Sun licks you all up like midges."

Yet he labored blindly on. It might be crazy, but what he had started, he would finish.

It was work against an inexorable time limit that rapidly was approaching. As the shadows lengthened, as the sun went down, they still had not finished.

Jonny Land limped unsteadily to turn on the work-shop lights. His face was a gray

mask of fatigue and sweat as he turned to the others.

"Two more hours," he said huskily. "We can't take more, if we're to get the dredge into the 'Phoenix' and take off before midnight."

Those two hours, afterward, seemed weeks in length to Carlin. And the mocking devil in his brain kept taunting, "It's no business of yours, you know!"

derously into the work-shop and they swung the massive magnetic dredge carefully aboard. Loesser and the others then hastily chained it to the bed of the truck.

Jonny limped toward the cab. "All right, we're starting. Harb, you drive. No, Marn—*you're not going to the spaceport with us.*"

Marn, face white and eyes big with fear, saw the gleam of the atom-pistol that Harb was thrusting into his pocket.

**"Courage, James Mason! Awake! Do Not Be Alarmed. You Are the Last Desperate Hope of All Mankind. You Must Survive!"**

**U**P—UP out of velvet blackness, slowly, the mind spiralled. Thought tendrils, awakening, writhed uneasily. They pushed out questioning impulses.

*James Mason?* That was him. Someone was calling. There was something he had to do—

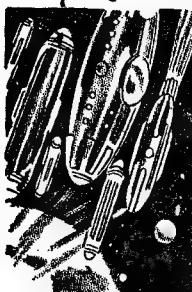
Mason tried to move, and the effort blasted his mind with a wave of stinging agony. He had something to do quickly, without delay. What was it? His world was a world of bottomless dark, spotted with whirling red flashes of pain. But memory prodded.

"Good," came the voice. "You are beginning to remember. You must locate and control your sight. It will be painful but necessary. We thank you for your willingness to make the great sacrifice. You will begin to remember our great need for a super weapon after being driven to this, our last refuge. Accordingly, your brain was removed from your body and placed in the brain case of a super—"

Mason's sub-level mind twisted. In terror, it tried to scream. His mind—he—his consciousness in one of those metallic monstrosities! He couldn't—

As remembrance washed into him, the ego that was Mason fought to control the rising surge of fear that tried to engulf him. He had a job to do! There was no turning back!

As the significance of his strange immortality unfolds before James Mason, so unfolds the amazing story told in **BATTLE OF THE BRAINS**, a complete novelet by James Shelton that will hold you spellbound. Audacious in conception, startling in its implications, **BATTLE OF THE BRAINS** is a science fiction must! Next issue!



"That's near enough!" Jonny's hoarse voice finally declared. "We can hook up those last cables on the way. All the work that requires heavy tools is done—and we daren't take more time."

They were, all of them, drunk with fatigue, staggering with the furious drive of twelve hours of unbroken toil. Blackened by welder flare, glistening with sweat, they looked to Carlin like a crew of devils.

Jonny's driving energy remained unconquerable.

"Marn," he ordered, "back the big truck in here. Harb, you and Carlin rig the hoist."

The big, flat-bodied ato-truck backed pon-

"Oh, Jonny, not that, no matter what happens!"

Jonny's blue eyes flashed arctic light. "That, or anything, now," he rasped. "You know what this means to our people, Marn."

Then his face softened, and he patted her arm.

Tears streaked her cheeks as she kissed and clung to him, and then to Harb.

Carlin was climbing heavily onto the truck when he felt her touch on his arm.

"You too, Laird," she whispered, quivering lips blindly pressing his cheek. "All of you must come back."

"Get on!" cried Harb Land, and then the

truck went into gear.

Carlin jumped for the cab, and under the starry night they were rolling at increasing speed down the twisting road toward the valley.

And suddenly all the nightmare mocking in Carlin's brain was gone and there was only the rush of sweet air against his face, and the splash of the lamps ahead, and the jolt and rumble of the big machine as they raced down toward the spaceport's distant beacons.

**E**ARTH air and Earth smells in Carlin's nostrils, sleepy Earth sounds in his ears; the shine of the old spaceport's beacons, and the soaring loom of the distant tower that marked the spot where a man of long ago had first dared space. This world, this little Earth, was worth risking death for, even for a stranger from far stars!

He knew he was a little crazy, he still had a corner of his mind that told him all this was mere intoxication of emotion which was sweeping away reason. But the mocking devil in Carlin's mind was gone, and he was one in mind and purpose with his companions, now.

The others too were feeling that wild reaction, for Loesser clapped Carlin's shoulder, crying:

"It's like getting out of prison to get started!"

"We're not off Earth yet!" warned Jonny. "Cut the lights and drive around to the north end of the spaceport, Harb. Ease the truck to the 'Phoenix' as quietly as you can." A little later he warned, "Slower, slower. Keep to the edge of the tarmac."

Lightless, its motors a mere low rumble, the big truck crept around the dark edge of the spaceport toward the "Phoenix." The little planet-ship took black shape in the darkness, a low, torpedo bulk brooding beneath the stars. Harb backed the truck toward its side, as they jumped out of the cab.

Light flashed on them from a hand-krypton in the door of the "Phoenix!" A lean, uniformed figure stood there, gun in hand, looking at them.

"I thought you would be coming," said Ross Floring quietly. "Jonny, I'm sorry about this."

Carlin was as frozen as his companions, by the disastrous overturn of their attempt at secrecy. Floring stepped out of the ship.

"I've been looking through your ship while

I waited," he said. "You have triple as much heat-screen coverage as you'd need for the Hot Side of Mercury. You were going to the Sun."

"You can't prove it, Ross," Jonny said levelly. "You've no proof."

"I've enough to prohibit this ship from clearing Earth until investigation," Floring replied. "A certain report will reach me from Canopus by morning. Then we'll see."

Carlin saw it then, saw the dark, giant figure of Harb Land stealing around the truck and looming up behind Floring. He glimpsed the gleam of Harb's raised atom-pistol.

Then Harb struck. The butt of the weapon came down on Floring's head and the officer crumpled limply to the tarmac.

"See if anyone else is in the ship!" Jonny said swiftly. "Loesser, watch the Control station!"

Then he bent with Carlin over the unconscious man.

"We'll have to take him with us," Jonny said. "If we leave him here he'd soon be found, then the Control cruisers would be after us."

A few weeks before, Laird Carlin would have been aghast at seeing a semi-sacred officer of Control Operations struck down. With what spirit of reckless defiance of law had his companions infected him? He marveled at himself as he coolly picked up the limp figure.

"Tie him into one of the chairs in the pilot room," Jonny was saying.

Harb came plunging out of the ship. "Nobody else aboard. He came over here alone."

By the time Carlin had the unconscious man secured in the pilot room, Harb and the others had slid open the big hatch in the side of the "Phoenix." Hastily, fumbling in darkness, they ran out the ship hoist and hooked onto the big magnetic dredge.

Then, with infinite labor, they swung the massive mechanism into the hold amidships. Mere short flashes of hand lamps had to suffice to guide the beam-head of the dredge down into the round keel opening.

"Fasten half the frame bolts—they'll hold till we get into space," panted Jonny.

Carlin skinned his knuckles in the dark, fumbling with bolts and wrench. Every instant he expected to hear an alarm from Loesser that Control officers were coming.

"That'll have to hold," said the sweating Jonny. "Run the truck off the tarmac. Harb, make ready for take-off!"

## CHAPTER VIII

## Solar Struggle

**I**XYGENATORS started throbbing, doors clanged, as the others tumbled aboard. Harb Land, smeared with dirt and oil, his shock of hair wild, climbed into the pilot seat and expertly touched controls.

"Generators coming on!" sang Loesser's breathless voice from the interphone, as the low, deep hum began.

"Stasis on," said Harb rapidly, his fingers busy. The blue cushion of force was around them as Carlin slumped drunkenly into a seat. "Zero, two and five acceleration schedule. Here we go!"

And the "Phoenix" swept up with a rush from the spaceport, the propulsion-waves streaming from its drive-plates hurling it out and upward into the star-sown sky, the spaceport lamps and the southward blinking lights of New York falling swiftly away.

"Authorization!" yelped a startled voice from the universal communic on the panel. "Give authorization for take-off!"

"Authorization already given," Harb Land rapped back, then cut the communic. He laughed. "That'll puzzle them a while."

Crazy, reckless, suicidal, to Carlin seemed the way that Harb was taking them out from Earth. The atmosphere of the planet had no sooner started a shrill, rising scream around them than it fell and faded as they came out of the envelope of air.

Luna burst up out of the eastern heavens like a great globe of dull gold against the stars. And then Carlin's eyes were smitten by the flare and glare of the brilliant disk of Sol, of the Sun.

And then the "Phoenix" lined out and was plunging headlong through the void at a speed that Carlin knew was flatly illegal to use inside any System, a rush toward that distant Sun flare.

"Cut down, cut down!" cried Jonny to his brother. "Any more speed and you'll not be able to decelerate in time to orbit around the Sun."

Harb Land turned a wild, dirty face aflame with emotion. "By heaven, we're on our way at last! We'll show them now that Earth-men can still blaze a space-trail nobody else has dared!"

And from back amidships came a hoarse

voice jubilantly singing the old Earth space-song:

Blast away toward the stars—

Jonny Land's voice lashed them, his thin face dripping and determined.

"You're all of you blowing your tops with excitement. This hasn't even started yet. Look at what we're heading for!"

Carlin heard the others fall silent and himself felt a chill of awe as he looked ahead at the giant fire orb toward which the "Phoenix" was plunging.

"We'll be orbiting before we have the dredge set up, unless we hurry," Jonny prod-ded. "Come on, help me with it."

The big magnetic dredge had to be bolted into place, the coils and pipes had to be hooked to their connections inside the ship, the cables to the generators, the cooling coils to the compressor, the outlets of the Markheim filters to the bunkers astern.

Thrumming, creaking, shivering in every strut to the blind thrust of power that was hurling it on, the "Phoenix" rocked and shook about them as Carlin labored with Jonny and two of the other men to make those last connections. The cramped space in the hold around the dredge was hot, stifling, for the oxygenators couldn't keep the air there pure.

"All ready!" Jonny called finally, after eternal-seeming hours of toil. "And none too soon. We're getting there fast. Harb has put out most of the heat-screens."

Through the windows, the ship seemed enveloped by a halo of dim light, the force-screens that repelled radiations of heat.

But when Carlin stumbled with Jonny into the pilot room, they were half blinded even through the screens by the fierce, blazing glare from ahead.

Half the sky ahead was Sun, a gigantic abyss of roaring flame that crushed the mind by its magnitude. All directions of space seemed canceled, and they were falling, falling, into an inferno of fire.

Harb turned a sweating face. "We'll cut off to orbit in less than an hour," he informed.

Ross Floring spoke from the chair in which he was tied, and in which he had come back into consciousness.

"Jonny, I've been waiting for you! Harb wouldn't listen to me. You've got to turn back!"

Jonny shook his head. "No use, Ross. I know you're only doing your duty. And I'm sorry to drag you into this danger. But we're not stopping now."

"But you'll never get there!" Floring exclaimed. "Control cruisers must already be after you. They'll have found out where I am by now."

"Empty threats!" Harb jeered. "They can't know where he is."

"Jonny, look at my badge!" cried Floring. "See the tiny radio bulb in the back of it? It's a 'finder' by which any Control officer can be located at any distance. When I didn't report back, they'd use it to spot me out here."

"If that's true," said Jonny Land, his thin face suddenly haggard, "they'll be after us by now. Harb, cut the communic back in!"

**H**ARB obeyed. Roar of static from the gigantic orb ahead was a dull background to the sharp voice that came from the instrument.

"Control Operations squadron four hundred thirty-three nine calling 'Phoenix'! Last warning! We are overhauling you and will shell you unless you turn and surrender."

Startled, Harb Land jabbed a button and twisted the knob of the visor-screen. The far-seeing eye quartered space behind them, and then the black space scene held steady. There against the stars came a little pattern of four tiny triangles of light. Triangles—galaxy-wide sign of Control.

"By heaven, they actually have come after us!" cried Harb. "Jonny, they're only minutes behind us and pulling up fast!"

"We broadside as soon as we range you unless you turn now," warned the steely voice from the communic.

Laird Carlin, only a few weeks before, would no more have dreamed of disobeying a Control Operations command than he would have of picking stars from the sky. Galaxy citizens were trained to revere the great organization that had made the Universe a place of law and order.

But the ancient independence of these men of Earth was strong in him now. They had already risked so much, had incurred certain penalty even if they now surrendered.

"Keep going!" Carlin exclaimed. "They can't follow us once you start orbiting close to the Sun's photosphere. No ordinary Control cruiser has heavy enough heat-screens to follow us into that!"

"By Jupiter, it's so!" exclaimed Harb, faint hope lighting his face. "But I daren't crowd on more speed now. I've got to start decelerating if we're to orbit correctly."

"Decelerate by plan," Jonny said grimly. "They may not range us in time. We'll soon know."

The "Phoenix," flying at a tangent toward the gigantic sphere of the Sun, was aiming to swing into an orbit around Sol as close as possible to its photosphere or gaseous surface.

It had to be so. No ship would ever have power enough to go that close to the Sun's colossal pull and hold its position by its own energy. To get that close and to stay that close to Sol without being drawn in to it, a ship had to go into an orbit around it like a tiny satellite.

The air in the "Phoenix" was already stifling hot. Jonny switched in another of the heat-screens, and the dim halo around the flying ship deepened.

Harb's fingers were flashing over the controls, decelerating, steering the ship in a closing spiral toward the Sun.

"Carlin, talk them out of this madness!" cried Ross Floring, aghast. "The cruisers will be broadsiding us in moments."

Carlin paid no attention. His eyes were on the visor-screen where the four cruisers now loomed big as they came closer.

Then it came. Silent, deadly, four blinding gouts of flame burst near the "Phoenix." Four salvos of atomic shells whose wave of force rocked the plunging ship. Loesser came tumbling into the pilot room, red face glistening.

"They'll bracket us next salvo or two!" he yelled. "What's our chance?"

"Turn on heat-screens Six and Seven!" roared Harb Land, without looking around. "I'm going into orbit now!"

"It's too soon!" Jonny cried warning. "It's—"

Carlin saw that Harb hadn't even heard. The giant was recklessly cutting the elements of their plotted course, depending on their own power to pull into orbit in time.

The heat-screens, all they had, were on full now. Another salvo burst to space-ward of them. Carlin knew the men behind realized Floring was aboard. But Control Operations would sacrifice any men to prevent the Sun-mining that always before had meant disastrous solar disturbances.

"Great blazing stars!" breathed Loesser,

staring. "Look at that!"

**F**orgotten, the deadly shells that were groping for them. For now the "Phoenix" was deep in the awesome corona of the star and was curving in closer through heat that was over two thousand degrees.

Carlin's mind shook to the fearful spectacle that was the firmament. Not he, nor any other living man, had ever come so close to a star. They were entering a region of such violent energies that all laws of space and time here seemed cancelled.

Blinding, eye-dazing even through the strong protective filter of the heat-screens, the brilliance of Sol stunned them. They looked on a vast, raging ocean of flaming gases, a sea of vaporized metallic and non-metallic elements that was like a cosmic furnace.

**E**VEN through the heat-screens, the radiance heated the air in the ship scorchingly. But now the visor-screen showed that the Control cruisers were falling back and disappearing from sight behind.

"They couldn't follow us this close to the photosphere!" Harb cried exultantly. "We've shaken them and we're almost in orbit."

"You can't orbit the Sun!" Floring pleaded. "And even if you could, the cruisers will lay to outside the heat and range you by locator and fire till they destroy us! Put about!"

The man Vito, choking and gasping for breath, came into the pilot room from the engine rooms astern.

"Heat-screens won't take another dyne! If we go closer, we're done for."

"We're orbiting now," Jonny said huskily. "Wait!"

Harb Land was engaged in the most difficult operation of spacemanship, bringing a ship into exact balanced orbit around a celestial body.

Most difficult, even when the body was a planet. Impossible, nearly, when the body was a Titanic star!

Carlin saw the giant's face a frozen mask as he centered his dial needles, fed force with infinite delicacy, guided, changed—and changed again.

Harb reached and slammed open a switch. The hum of propulsion waves died. The "Phoenix" was without driving power. And the needle of the gravi-gauges remained constant, the ship's path around the Sun was unvarying.

"We've orbited!" Harb Land's voice was

a hoarse, exhausted sound.

Carlin wanted to shout, "By heaven, there are no spacemen in the galaxy except Earthmen—none!"

The "Phoenix" was circling the Sun, deep in the corona and reversing layer and close to the photosphere or light-emitting surface which was the vague boundary of the star itself.

Their sensation was that of men suspended over a Universe of raging flame and force. The mind shook to the impact of it. They were here where no men, no life, had ever been intended to be. They were violating the sanctity of a star.

"Now—the dredge," Jonny said hoarsely. "We've not power enough to force the heat-screens like this for long. Come on, Carlin."

Carlin stumbled back with him into the stifling hold. The men around the towering magnetic dredge were like sooty devils staring with wild eyes.

The metal was so hot its touch made him cry out as he closed the circuit of the generators with the ato-turbines. The rotors began their whine, building up a magnetic field.

The whole ship suddenly shook and quivered. Harb came plunging back into the hold.

"Those Control Cruisers are starting to salvo us by radiolocator!"

"We only need a little time," panted Jonny Land. "The cooler coils, Carlin!"

Carlin felt like a man in a dream as he sweated with Jonny to get the magnetic dredge started. The field was building steadily, and the great nozzles of the beam-head had been lowered below the keel. Jonny's brilliant eyes clung to the panel of gauges, and finally he opened the field-switch.

"Now!"

They crowded around the view-plate in the keel, peering half-blindly down against the glare of the raging Sun-sea below. The dredge was projecting a powerful, concentrated magnetic field down into that ocean of flaming gas like a sucking straw. But for moments they saw nothing. Time that seemed endless went by. Then—

"Here she comes!" yelled Loesser.

A column of flaming vapor was shooting up from the fiery ocean below. Compared to the gigantic mass of Sol, it was the merest filament, the filmiest thread of fire.

But it was rushing up and up toward the hovering Phoenix, a finger of fiery vaporized elements drawn irresistibly up along the

beam of magnetism to the ship.

Another salvo of shells went off in space somewhere close by and rocked the ship with its wave of force. But next instant came a heavier impact, as the fiery column of gas reached the nozzles below the ship.

They heard a deafening roar. That up-sucked stream of vaporized elements was being drawn through the heat-proof nozzles and intakes, through the Markheim filters that screened out its copper atoms, and was then being shot downward again by the kickback's negative field.

"The kickback's working!" Jonny Land yelled. "If the effect of it is what we calculated, we've done it!"

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## CHAPTER IX

### *An Earthman Comes Home*

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**F**OR the moment, none of them paid any attention to the fact that precious copper was solidifying in the cooler coils into granules of metal that were being blown into the bunkers. The real test was what their beam of magnetic force was doing to the surface of the Sun.

Did it seem incredible, as it almost did to Carlin, that such a fragile finger of force could in the least disturb the mighty orb below? He knew better. He knew the unnaturally delicate balance of a star's surface, which a slight change of pressure artificially induced could stir into a whirl that would expand in giant sun-spots. If that happened, it would mean chaos.

"No sign of a whirl yet," Jonny breathed, peering down through black glare-proof lenses. "No sign at all."

There was no moment of crisis, no clean-cut moment of triumph. There was just the time speeding by, the flow of copper into the ship, and the constant reports of Jonny—"No whirl forming yet."

Salvos shook the ship as the Control cruisers far outside the sun glare fired more and more accurately. But they went unheeded. Success or failure of the most audacious engineering exploit in the galaxy's history hinged upon Jonny's muttered reports.

"No whirl yet."

Jonny Land finally raised his head, looked at them as they stood with wild surmise on their faces.

"We've done it," he said, almost unbelievably. "We've nearly filled the bunkers with copper and there's no whirl down there, no disturbance to grow into a spot. We've made Sun-mining possible."

Tears were running down Loesser's face. Harb Land looked dazed. But Jonny walked across the hold to the wall through which the cooler coils fed into the bunkers. He peered through a quartz view-plate.

They looked with him. The bunker rooms were heaped high with shining red granules. Copper, virgin-pure, blown into the rooms and already almost filling them. Copper milked from the Sun!

"Copper for Earth!" whispered Jonny, his thin face blazing now. "Power, and new life, for the old planet!"

The "Phoenix" rocked wildly and metal screeched rendingly as they were flung from their feet by a salvo that had finally bracketed the ship.

"The feed pipes!" screeched Loesser, scrambling to his feet beside Carlin.

Carlin saw. The ship's walls had held, but the shock had snapped strained cables and cooler coils. Two intake tubes were giving way, white-hot copper vapor forcing out through cracks in them.

"Veer-clamps on those two pipes!" yelled Jonny. "If they give, everything goes!"

Knowledge of what it meant if the pipes gave way, if super-heated metallic vapor blew out into the hold, flung Carlin in a crazy rush for the Veer-clamps and wrenches.

He got a clamp around one of the pipes, and the man Vito started spinning shut the bolts that would hold the fracture tightly. He swung round toward the other pipe.

"Clamp!" yelled Jonny Land, in a cry that was like a hoarse howl of agony.

Carlin's blood left his heart as he glimpsed the most horrible and heroic sight he had ever beheld. The other strained tube had been about to blow open, and Jonny Land had flung his arms around it and was holding it together by agonized effort while the white-hot vapor sprayed his body.

Harb Land wildly snatched his brother away as Carlin flung the big clamp around the pipe and convulsively spun its bolts shut.

He staggered around then. Harb was bending over his brother.

"Jonny! Jonny!"

Jonny's whole chest and neck were blackened and blasted. His face was a ghastly,

sooted mask as his eyes looked up at them.

Another salvo went off close by, and again the "Phoenix" rocked wildly.

"Cut the dredge!" Carlin cried. "We've proved the process is successful, and we can't stay here now or your brother will die!"

Loesser cut off the dredge and Harb Land rushed for the pilot room. Carlin heard him shouting there into the communic:

"Control cruisers from 'Phoenix'! We're putting out to surrender. Be ready to give injured man medical treatment."

"Break out of your orbit at once and we'll contact you for surrender by locator when you're outside the corona," came the sharp, fast answer.

**T**HE generators of the "Phoenix" started roaring their shrillest note as Harb Land frantically flung power into the drive-plates. Beneath the thrust of its propulsion vibrations the battered ship began to move, to fight its way out of the gigantic pull of Sol, breaking slowly out in a tangent off its orbit.

Carlin, Loesser, all of them in the hold, were bending over Jonny Land when Floring, released by Harb, came back. The officer looked down and then shook his head somberly.

"No chance," he said. "He won't even last until we reach the cruisers."

Jonny was lying, unhearing, fighting for breath, looking up at them without seeing them, his sooted face a writhing mask. Carlin felt tears sting his eyes, and saw everything through a blur.

"Jonny, we did it—you did it!" Loesser was choking. "Made Sun-mining possible! Why, soon now there'll be scores of ships, new, big ships, coming here and getting all the copper Earth needs!"

He was, Carlin knew, trying to reach home to the dimming mind with that reassurance, that assurance that the dying man had not given away life in vain.

It didn't reach Jonny Land. He wasn't Jonny Land any longer, he was just a living creature dying in pain, and he couldn't feel or know anything but pain. And then the pain went, and life went with it, and his face was a lax, empty mask that had no meaning for them.

Loesser sobbed: "He didn't know—he didn't know what I was saying!"

Carlin felt dull, tired, drained of emotion. He had just seen the only hero he had ever known die, but a hero's death was just

death, just mortal pang and final release.

He went forward to the pilot room.

"Jonny's dead," he said to Harb Land.

Harb's shoulders sagged, but he did not turn as he guided the "Phoenix" on space-ward to where the grim Control cruisers waited.

\* \* \* \* \*

Control Court here in New York was only a small room in the building by the space-port. There were no officials in it except the three middle-aged judges who sat behind a small table and prepared to pass sentence on Laird Carlin and his seven comrades.

There were no lawyers, no oratory, no jurymen. They were not needed. The government psychologists who had quietly questioned the accused men during their four days in prison had submitted the factual hypnosis records which were complete and incontrovertible evidence.

The chief judge, the man in the middle, quietly read the decision as Carlin and the others faced him.

"This court is placed in a peculiarly difficult position in assessing your offense. On the one hand, you men deliberately broke a Control Council regulation and defied its officers. On the other hand, your action has proved the practicability of a process of Sun-mining which will be of incalculable value to this and every other System in the galaxy.

"To forgive your offense because the ultimate result was good would be to set a fatal precedent. It would establish the principle that illegal means do not matter if end-purposes are good. We cannot permit such a precedent to be established. Therefore, regrettably, this court must pass the prescribed punishment for your offense."

Carlin could not deny the crystalline logic. He had known from the first that this must be the issue, and he was too tired to care.

"You are sentenced to two years imprisonment in Rigel Prison and also to the loss of your spacemen's licenses or Cosmic Engineer's certificate, whichever you hold. Such sentence is obligatory in this case." He added quickly, "It is, however, within our discretion to suspend the prison term and to limit cancellation of your certificates to one year from date. Such is the sentence of this court."

Loesser drew a gusty breath of relief. "For a minute, I thought it was Rigel for us

sure enough!"

The chief judge had risen. "Speaking personally," he added quietly, "we would like to congratulate you men upon a great achievement."

Ross Floring came to their side.

"A year's suspension isn't long," he said, and Carlin nodded wearily.

When, with Harb Land's giant figure leading them, they emerged from the building into the sunlight, a roar that deafened them came from the waiting crowd outside. The people of Earth, at least, had no need to temper their gratitude.

Harb was grimly silent as he pushed through the crowd toward Marn and old Gramp Land. Carlin found himself buffeted by eager hands, assailed by joyful faces and voices, as he followed.

A grizzled, excited man clapped his shoulder. "We Earthmen showed 'em we could still conquer space, didn't we?"

**WE EARTHMEN?** Somehow, for the first time in all these days, Carlin's dulled mind felt a stir of pride as though at an accolade.

He didn't like to meet Marn's pale face. But she spoke steadily.

"It's all right, Laird, about Jonny. Women of Earth for two thousand years have seen their men go out into space—and not all come back."

Floring had followed them. "I want you to see something," he said.

He led the way toward the towering Monument of the Space Pioneers. Carlin looked at the roll of names. Then his eyes suddenly blurred as he saw that, for the first time in several centuries, a new name had been added to the bottom of that great roll.

JON LAND

Marn's eyes were shining. And her giant brother looked long, with haggard face somehow comforted. But old Gramp Land turned sadly away.

"A name on a stone is poor exchange for my boy," he muttered. "I'm gettin' old."

That evening, in the old house up on the ridge, they were subdued and silent at dinner. The table was too big, and they looked around too often as if listening for a familiar limping step and a cheerful voice.

Carlin was doubly oppressed because of the thing that he had not yet told them. He

hated, somehow, to break the news.

"There's something they found out when they made our psycho-records for the trial," he said finally. "Mine showed that I had no instability of coordination, no star-sickness any longer."

"You mean, you're cured?" said Harb, surprised. "Why, that's fine. I never thought of it, but you made the trip Sunward all right, so I should have known."

"The psychos say," Carlin told them, "that some people out in the galaxy now and then approximate much closer to the original Earth stock than the average. Such people respond rapidly to Earth-treatment. I'm one of them, it seems." He added uncomfortably, "I can go back home to Canopus now, though I'll have to work at a desk job for a year. The only thing is that there's a ship for Canopus tonight, and there won't be another for weeks."

"You're not going tonight?" exclaimed Harb. "Not as soon as that?"

Carlin felt a little heartsick. "I wish I didn't have to, so soon. But there's nothing for me to do here now that I'm all okay."

He had somehow expected Marn to protest too. But she did not. She only said quietly:

"I'll drive you down to the spaceport."

"I think I'd rather walk down," Carlin said slowly. "I don't know why, but I would. It's not far and I sent my bags on down."

"Then I'll walk a little of the way with you," said Marn.

Twilight had changed into soft summer darkness by the time Carlin had exchanged a last old-fashioned hand grip with Harb and Gramp Land, and started down the road with Marn.

She went only around the first turn of the old road with him, and then stopped.

"Good-by, Marn," he said, but she only averted her face.

Carlin hesitated, then turned and walked on. Luna was lifting its shining shield in the east, and the silver summer silence lay over everything, hardly broken by the stir of branches and the low buzz of insects. The night was warm and still.

He had a lump in his throat and he tried to laugh at himself because he had it. A man couldn't let illogical emotions overrule his reason. This crazy, heroic old planet Earth and its people—he would never forget them, but he had to return to his own life and work, he had to go home.

Laird Carlin suddenly stopped. He knew, abruptly, why dull oppression had gnawed his mind all day. It wasn't because he was going home. It was because he was leaving home. He was leaving the only place where his spirit had ever found something it had always lacked, a peace, an ancient certitude, a kinship that had grown and grown.

Carlin turned and strode rapidly back up the road. Not until he was almost upon her did he perceive that Marn Land was still standing in the silvered road where he had left her.

"I was waiting for you," she said simply. "I knew you wouldn't go."

His hands grasped her shoulders as he spoke in a rush.

"Marn, I couldn't! I thought of Canopus, I thought of friends there and a girl who likes me and the garden cities I used to love, and it was all unreal. I'm tied somehow to

this queer old planet, to Jonny and Harb and all of the others, and to you!"

She came into his arms quietly. "I know. There's been more than one like you, more than one who came to Earth and found he somehow couldn't leave. This old world is in the blood of our race, Laird." She looked up. "A year's not long. We'll need you here to replace Jonny, to supervise the Sun-mining. And I need you. I always will."

Carlin held her closely, all tiredness and doubts gone now, strangely content. He looked up at the summer stars and thought of worlds out there, but it was all far away, far away.

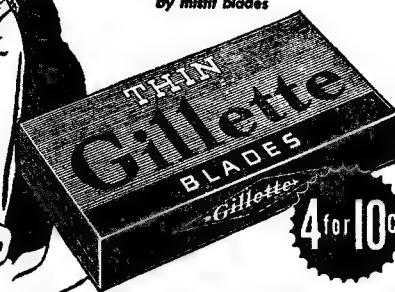
And Earth was close, its ancient quiet night enfolding him. Soft wind stirred leafing branches in the moonlight, and the road wound up white and sure toward the old house, and out of the vastness of time and space, an Earthman had come home.

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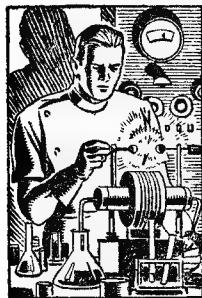
# THE DISCIPLINARY CIRCUIT

By MURRAY LEINSTER

*Fleeing from the fury of despots through parsecs of space, Kim Rendell and Dona Brett dodge ghastly and surprising dangers while they seek refuge on some obscure planet!*

## CHAPTER I

### *Victim of Tyrants*



KIM RENDELL stood by the propped-up "Starshine" in the transport hall of the primary museum on Alphin III. He regarded a placard under the space-ship with a grim and entirely mirthless amusement. He was unshaven and hollow-cheeked. He was even ragged. He was a pariah because he had tried to strike at the very foundation of civilization. He stood beside the hundred-foot, tapering hull, his appearance marking him as a blocked man. And he re-read the loan-placard within the railing about the exhibit.

Citizens, be grateful to Kim Rendell, who shares with you the pleasure of contemplating this heirloom.

This is a space-ship, like those which for ten thousand years were the only means of travel between planets and solar systems. Even after matter-transmitters were devised, space-ships continued to be used for exploration for many years. Since exploration of the Galaxy has been completed and all useful planets colonized and equipped with matter-transmitters, space-ships are no longer in use.

This very vessel, however, was used by Sten Rendell when the first human colonists came in it to Alphin III, bringing with them the matter-transmitter which enabled civilization to enter upon and occupy the planet on which you stand.

This ship is private property, lent to the people of Alphin III by Kim Rendell, great-grandson of Sten Rendell.

Kim Rendell read it again. He was haggard and hungry. He had been guilty of the most horrifying crime imaginable to a man of his time. But the law would not, of course, allow him or any other man to be coerced by any violence or threat to his personal liberty.

Freedom was the law on Alphin III, a wryly humorous law. No man could be punished. No man could have any violence offered him. Theoretically, the individual was free as men had never been free before in all of human history. Despite Kim's crime, this spaceship still belonged to him and it could not be taken from him.

Yet he was hungry, and he would remain hungry. He was shabby and he would grow shabbier. This was the only roof on Alphin III which would shelter him, and this solely because the law would not permit any man to be excluded from his rightful possessions.

A LECTOR came up to him and bowed politely.

"Citizen," he said apologetically, "may I speak to you?"

"Why not?" asked Kim grimly. "I am not proud."

The lector said uncomfortably:

"I see that you are in difficulty. Your clothes are threadbare." Then he added with unhappy courtesy, "You are a criminal, are you not?"

"I am blocked," said Kim in a hard voice. "I was advised by the Prime Board to leave Alphin Three for my own benefit. I refused. They put on the first block. Automatically, after that, the other blocks came on one each day. I have not eaten for three days. I suppose you would call me a criminal."

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AN AMAZING COMPLETE NOVELET

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In desperation Kim sprang to the control board, seized a couple of loose wires and struck the ends together

"I sympathize deeply," the lector answered unhappily. "I hope that soon you will concede the wisdom of the advised action and be civilized again. But may I ask how you entered the museum? The third block prevents entrance to all places of study."

Kim pointed to the loan-card.

"I am Kim Rendell," he said drily. "The law does not allow me to be prevented access to my own property. I insisted on my right to visit this ship, and the Disciplinary Circuit for this building had to be turned off at the door so I could enter." He shivered. "It is very cold out-of-doors today, and I could not enter any other building."

The lector looked relieved.

"I am glad to know these things," he said gratefully. "Thank you." He glanced at Kim with a sort of fluttered curiosity. "It is most interesting to meet a criminal. What was your crime?"

Kim looked at him under scowling brows.

"I tried to nullify the Disciplinary Circuit."

The lector blinked at him, fascinated, then walked hastily away as if frightened. Kim Rendell stooped under the railing and approached the "Starshine."

The entrance-port was open, and a flush ladder led up to it. Kim, hollow-cheeked and ragged and defiant, climbed the steps and entered. The entry-port gave upon a vestibule which Kim knew from his grandfather's

tales to be an airlock. Kim's grandfather had once gone off into space in the "Starshine" with his father. It was, possibly, the last space-flight ever made.

For a hundred years, now, the ship had been a museum-piece, open to public inspection. But parts had been sealed off as uninteresting. Kim broke the seals. This was his property, but if he had not already been a criminal under block, the breaking of the seals would have made him one. At least, it would have had to be explained to a lector who, at discretion, could accept the explanation or refer it to a second-degree counsellor.

The counsellor might deplore the matter and dismiss it, or suggest corrective self-discipline.

If the seal-breaker did not accept the suggestion the matter would go to a social board whose suggestion, in turn, could be rejected. But when it reached the Prime Board—and any matter from the breaking of a seal to mass murder would go there if suggested self-discipline was refused—there was no more nonsense.

Kim's case had reached the Prime Board instantly, and he had been advised to leave Alphin III for his own good. His crime was monstrous, but he had ironically refused exile.

Now he was under block. His psychogram had been placed in the Disciplinary Circuit.

**Disciplinary Circuit:** The principal instrument of government during the so-called Era of Perfection in the First Galaxy. In early ages, all the functions of government were performed by human beings in person. The Electric Chair (q.v) was possibly the first mechanical device to perform a governmental act, that of the execution of criminals.

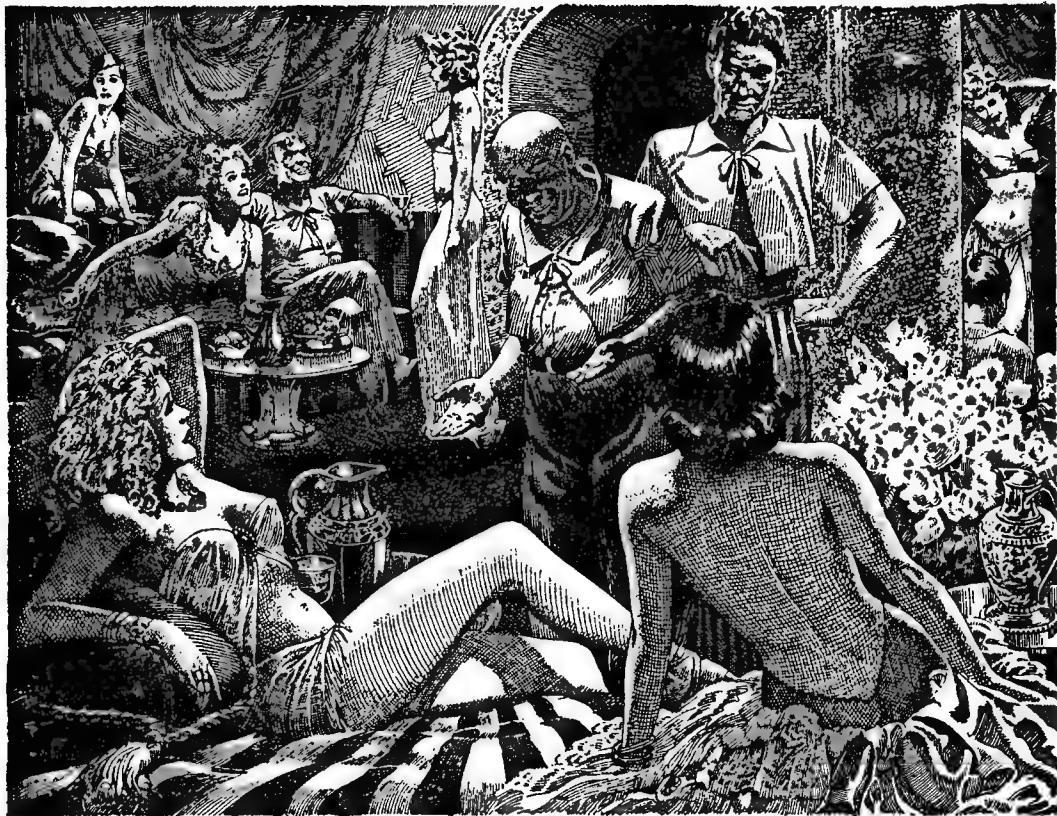
The Disciplinary Circuit was a device based upon the discovery of the psychographic patterns of human beings, which permitted the exact identification of any person passing through a neuronic field of the type IX2H. . . . A development which permitted the induction of alternative electric currents in any identified person, made the Disciplinary Circuit possible . . . It was first used in prisons, permitting much less supervision of prisoners (See Prisons and Prisoners) with equal security.

Later, because it allowed of an enormous reduction in the personnel of government, all citizens were psychographed. Circuits were set up in all cities of the First Galaxy. When a broadcast adaptation became possible, the system was complete. Every citizen was liable to discipline at any time.

No offender could hide from government. Wherever he might be, he was subject to punishment focused upon him because of his completely individual psychographic pattern . . . Worship of efficiency and the obvious reduction in taxes (See Taxes) at first obscured the possibilities of tyranny inherent in such a governmental system. . . .

[See (1) Era of Perfection, (2) Revolts, (3) Ades, (4) First Galaxy, Reconquest of. For typical developments of government based upon the Disciplinary Circuit, see articles on Sirius VIII, Algol II, Norten V and the almost unbelievable but authenticated history of government on Voorten II.]

*Encyclopaedia of History, Vol. XXIV. Cosmopolis, 2nd Galaxy.*



On the other side of the world, the loveliest women of Alphin III were lolling away their lives in luxurious palaces

On the first day he was blocked from the customary complete outfit of new garments, clean, sterile, and of his own choice. These garments normally arrived by his bedside in the carrier which took away the old ones to be converted back to raw material for the garment machines.

On the second day he could enter no place of public recreation. An attempt to pass the door of any sport-field, theatre, or concert stadium caused the Disciplinary Circuit to act. His body began to tingle. He could turn back then. If he persisted, the tingling became more severe. If he was obstinate, it became agony, which continued until he turned back.

On the third day he found it impossible to enter any place of study or labor. The fourth day blocked him from any place where food or drink was served. On the fifth day his own quarters were barred to him.

After seven days the city and the planet would be barred. Anywhere he went, his body would tingle, gently in the morning, more and more strongly as the day wore on,

until the torment became unbearable. Then he would go to the matter-transmitter, name his chosen place of exile, and walk off the planet which was Alphin III.

**B**UT it happened that Kim was a matter-transmitter technician. It happened that he knew that the Disciplinary Circuit was tied in to the matter-transmitter, and blocked men were not sent to destinations of their own choosing.

Blocked men automatically went to Ades. And they did not come back. Ever.

Behind the sealed-off parts of the spaceship, Kim searched hungrily and worked desperately, not for food, of course. He had determined to attempt the impossible. He had accomplished only the first step toward it when he felt an infinitesimal tingling all over his body. He stood rigid for a second, and then smiled grimly. He closed the casing of the catalyzer he had examined and worked on.

"Just in time," he said. "The merciless brutes!"

He moved from the catalyzer. A moment later he heard footsteps. Someone came up the flush ladder and into the space-ship. Kim Rendell turned his head. Then he bent over the fuel-register, which amazingly showed the tanks to be almost one-twelfth full of fuel, and stood motionless.

The footsteps moved here and there. Presently they came cautiously to the engine-room. Kim did not stir. A man made an indescribable sound of satisfaction. Kim, not moving even his eyes, saw that it was the lector who had spoken to him outside the ship. He did not address Kim now. With a quite extraordinary air of someone about to pick up an inanimate object, the lector laid hands upon Kim to lift him off his feet.

"Citizen!" Kim said severely. "What does this mean?"

The lector gasped. He fell back. His mouth dropped open and his face went white.

"I—I thought you were paralyzed."

"I do not care what you thought," Kim said. "It is against the law for any citizen to lay violent hands upon another."

By an effort the lector babbler regained his self-control.

"You—you . . . The Circuit failed to work!"

"You reported that I had entered this ship," Kim said drily. "There is some uneasiness about what I do, because of my crime. So the Circuit was applied to paralyze me, and you were ordered to bring me quietly to the matter-transmitter. As you observe, it is not practical. Go back and report it."

The lector said something incoherent, turned and fled. Kim followed him leisurely to the entry-port. He turned the hand-power wheels which put a barrier across the entrance. He went back to his examination of the ship. The first part of the impossible had been achieved, but there was much more, too much more, which must be done. He worked feverishly.

His grandfather had told him many tales of the "Starshine." She had made voyages of as long as two years in emptiness, at full acceleration, during which she had covered four hundred light-years of space, had purified her air, and fed her crew. Her tanks could hold fuel for six years' drive at full acceleration and her food-synthesizers, primitive as they were by modern standards, could yet produce some four hundred foodstuffs from the carbon, hydrogen, nitrogen, and traces of other elements into which almost

any organic raw material could be resolved.

She was, in fact, one of the last and most useful space-ships ever constructed at the last space-ship yard in existence. She was almost certainly the last ever to be used. But she was only a museum-piece now and her switches were opened and her control-cables severed lest visitors to the museum injure her. But Kim's grandfather had lectured him at great length upon her qualities. The old gentleman had had an elderly man's distaste for modern perfectionism.

Kim threw switches here and there. He spliced cables wherever he found them cut. He was hungry and he was gaunt, and he worked with a bitter anticipation of failure. He had been in the museum for almost an hour, and in the ship for half of that, when voices called politely through the barrier-grille.

"Citizen Kim Rendell, may we enter?"

He made sure it was safe, then opened the way.

"Enter and welcome, citizens," he said ironically, in the prescribed formula. But his hands were clenched and he was all ready to fight for his life.

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## CHAPTER II

### *Break for Freedom*

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**S**LOWLY the Prime Board of Alphin III filed up the flush ladder and into the cabin of the "Starshine." There was Malby, who looked like an elderly sheep. There was Ponter, who rather resembled an immature frog. There was Shimlo, who did not look like anything but an advanced case of benevolent imbecility, and Burt, who at least looked intelligent and whom Kim Rendell hated with a corrosive hatred.

"Greeting, citizen," Malby said. Even his voice had a bleating quality. "Despite your crime, we have broken all precedent to come and reason with you. You are not mad, yet you act like a madman."

Kim grinned savagely at him.

"Come, now! I found a material that changes a man's psychogram, so he's immune to the Disciplinary Circuit. I was immune to discipline. So you four had me seized and my little amulet taken away from me. And then you sealed up every other bit of that material on the planet. Not so?"

"Naturally," Burt said pleasantly. "The Disciplinary Circuit is the basis of civilization nowadays. All discipline and hence all civilization would cease if the Circuit were nullified. Naturally, you must be disposed of."

"But carefully, so if there is anyone who shares my secret, he'll be betrayed by trying to help me!" said King. "And quietly, too, so those amiable sheep my fellow-citizens won't suspect there's anything wrong. They don't realize that they're slaves. They don't know of your pleasure-palaces on the other side of the planet. They don't realize that, when you take a fancy to a woman and she's blocked in her quarters until she's hysterical with fear and loneliness, you advise her to take psychological treatments which make her a submissive inmate of the harems you keep there. They don't know what happens to men you put under block for being too inquisitive about those women and who enter the matter-transmitter for exile."

Burt looked mildly inquiring. "What does happen to them?"

"Ades!" Kim said furiously. "They go to the transmitter and name their chosen place of exile, and the transmitter-clerk dutifully pushes the proper buttons, but the Circuit takes over. They go to Ades! And no man has ever come back."

There was a sudden tension in the air. Burt looked at his fellows. Shimlo was the picture of benevolent indignation, but his eyes were ugly. Ponter opened his mouth and closed it absurdly, looking more than ever like a frog.

"This is monstrous!" Malby bleated. "This is monstrous!"

Burt held up his hand.

"How did you get this strange idea?" he asked.

"I'm a matter-transmitter technician, fourth grade," Kim said coldly. "I worked on the transmitter when it gave trouble. I found the Disciplinary Circuit tie-in. I traced it. So I knew there was something wrong about all personal freedom on Alphin III and I started to look for more things wrong. I found them. I started to do something about them. Then I got caught."

Burt nodded.

"So!" he said thoughtfully. "We underestimated you, Kim Rendell. It is much pleasanter to rule Alphin Three as beloved citizens than as admitted tyrants. There are times when we have to protect ourselves. Naturally, we would rather not show our

hands. It is clear that you must be sent into exile. Frankly, to Ades—whatever it may be like there. Apparently you did not have any friends."

"I dared not trust any of the sheep you rule," Kim said angrily. "But I did know there was more hafnium on this ship. I didn't dare come at first, or you'd have guessed. But after I'd starved a bit and was convincingly cold, I risked the venture. You guessed my intention too late. I can defy you again, even if you did take away my first protection from the Circuit. You know that?"

Burt nodded again.

"Of course," he admitted. "Yet we do not want a scandal. We will make a bargain within limits. You must be disposed of, but we will promise that you can go wherever you choose via the matter-transmitter."

"Your word's no good," Kim snapped.

"You will starve," Burt said mildly. "Of course you can seal yourself in the ship, but we will have lectors, special lectors, waiting for you when you come out again."

**K**IM scowled. "Yes?" he said. "I've been here half an hour. The ship's circuits were cut, but I've put the communicator back in working order. I can broadcast over the entire planet, telling the truth. I won't destroy your power, but I'll make your slaves begin to realize what they are. Sooner or later, one of them will kill you."

Malby bleated. It was not necessarily panic, but there are some minds to whom public admiration is necessary. Such persons will commit any crime to get admiration which they crave with a passionate desire. Burt held up his hand again.

"But why tell us?" he asked pleasantly. "Why didn't you simply, broadcast what you've learned? Possibly it was because you wished to bargain with us first? You have terms?"

Kim ground his teeth.

"That's right," he said. "There is a girl, Dona Brett. She was to marry me, but one of you saw her, I think you, Burt. She is now blocked in her quarters to grow hysterical and terrified. It was on account of her that I acted too soon, and got caught. I want her here."

Burt considered without perceptible emotion.

"She is quite pretty, but there are others," he said in his detached way. "If we send her, you will not broadcast?"

"I'll kill her and myself," Kim said. "It's apparently the only service I can do her. Get out, now. It will take your best technician at least forty minutes to make a scrambler which will keep me from broadcasting. I'll give you twenty minutes to get her to me. I'll talk to all the planet if she isn't here."

Burt shrugged.

"Almost, I overestimated you," he said mildly. "I thought you had an actual plan. Very well. She will come. But if I were you, I would not delay my suicide."

Burt's eyes gleamed for an instant. Then he went out, followed by the others. Kim worked the controls which sealed the ship. He got feverishly to work again.

From time to time he stared desperately out of the vision-ports, and then resumed his labors. His task seemingly was an impossible one. The "Starshine" had been made into a mere museum exhibit. It was complete, but Kim's knowledge was inadequate and his time far too short.

Eighteen minutes passed before he saw Dona. She stood quietly beside the railing outside the space-ship, alone and quite pale. He opened the outer air-lock door. She came up. He closed the outer door and opened the inner. She faced him. She was deathly white. As she saw him, hollow-cheeked and bitter, she managed to smile.

"My poor Kim! What did they do to you?"

"Blocked me!" Kim cried. "Took away my hafnium gadget and put me on the Circuit. They locked up every scrap of hafnium on the planet behind an all-citizen block. They just didn't know that it was used in spaceships in the fuel-catalyzers. I've found enough to make the two of us safe, though. Here!" He thrust a scrap of metal into her hand. "Hold it tightly. It has to touch your skin."

She caught her breath.

"I was blocked in my quarters, and I couldn't come out," she told him unsteadily. "I was going crazy with terror, because you'd told me what it might mean. I tried—so hard—to break through. But flesh and blood can't face the Circuit. I hadn't any reason to hope that you'd be able to do anything, but I did hope."

"I told them I'd kill both of us," he said fiercely. "Maybe I shall! But if I can only find the right cable, we'll both be doomed."

Suddenly, every muscle in his body went rigid and a screaming torment filled him. It lasted for part of a second. His face went

gray. He wetted his lips.

"Burt!" he said thickly. "He had a psychrometer under his robe. They came here, and he knew my psychogram was changed by the hafnium I'd found, so while they talked he stole the new pattern. It's taken them this long to get it ready for the Circuit. Now they're putting it in."

With a sudden, convulsive jerk, he went rigid once more. His muscles stood out in great knots. He was paralyzed, with every nerve and sinew in his body tensed to tetanic rigor. Agony filled him with an exquisite torment. It was the Disciplinary Circuit. It was those waves broadcast, focused upon him at full power. They would have found him anywhere upon the planet. And their torment was unspeakable.

**T**HREE was a stricken silence in the space as no other space-ship had been face as white as his own. She sobbed suddenly.

"Kim!" she cried desperately. "I know you can hear me! Listen! They must have me on the Circuit too, only what you gave me has thrown it off. They expect to hold us paralyzed while they cut in with torches and take us. But they mustn't! So I'm going to give you the thing you gave me. If it changed my pattern, it will change yours again, to something they can't guess at." She sobbed again. "Please, Kim! Don't give it back. Go ahead and do what you planned, whatever it is. And if you don't win out, please kill me before you give up. Please. I don't want to be conditioned to do whatever they want in their pleasure-palaces."

She took the tiny sliver of metal in her shaking fingers. She pushed aside the flesh of his hand to put it in his grip. Courageously she released it.

The agonized paralysis left Kim Rendell. But now Dona was a pitiful figure of agony.

Kim groaned. Rage filled him. His anguish and fury was so terrible that he would have destroyed the whole planet, had he been able. But he could not permit her gift, which she had given at the price of such torment, to go without reward. He must struggle on to save them both, even though now he had no hope.

He sprang to the control-board. He stabbed at buttons almost at random, hoping for a response. He'd tried to get the ship into some sort of operating condition, but now there was no time. Frenziedly he attempted

to find some combination of controls which would make something, anything happen. He slipped the second bit of hafnium into his mouth to have both hands free. In desperation he ripped the control-board panel loose. He saw clipped wires everywhere behind it. Seizing the dangling ends, he struck them fiercely together. A lurid blue spark leaped. He cried out in triumph, and the morsel of metal Dona had sacrificed to him dropped from his lips.

His muscles contorted and agony filled him.

There was a roaring noise. The "Starshine" bucked violently. There were crashes and there was a feeling of intolerable weight which he could feel, despite his agony. The ship reeled crazily. It smashed through a wall. It battered into a roof. It spun like a mad thing and went skyward tail-first with Kim Rendell in frozen, helpless torment, holding two cables together with muscles utterly beyond his control.

It went up toward empty space, in which no other vessel was navigating anywhere.

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### CHAPTER III

#### *Rays of Destruction*

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**E**VENTUALLY the "Starshine," alone in space as no other space-ship had been alone in twenty thousand years, behaved like a sentient thing. At first, of course, her actions were frenzied, almost insane, as if the Disciplinary Circuit waves which made Dona a statue of agony and kept Kim frozen with contorted muscles could affect the spaceship too.

Wildly the little vessel went upward through air which screamed as it parted for her passage. She yawed and swayed and ludicrously plunged backwards. The screaming of the air rose to a shriek, and then to a high thin whistle, and then ceased altogether. Finally she was free of the air of Alphin III.

After this she really made speed, backing away from the planet. Her meteor-detectors had been turned on in one of Kim's random splicings, and when current reached them they reported a monstrous obstruction in her path and shunted in the meteor-repelling beams. The obstacle was the planet itself, and the beams tried to push it away. Naturally, they pushed the ship itself away, out into the huge chasm of interplanetary space.

It kept up for a long time, too, because Kim was paralyzed by the broadcast waves. They were kept focused upon him by the psychographic locator. So long as those waves of the Disciplinary Circuit came up through the ionosphere, Kim's spasmodically contracted muscles kept together the two cables which had started everything. But the "Starshine" backed away at four gravities acceleration, faster and ever faster, and ordinary psychographic locators are not designed for use beyond planetary distances. After all, there had been no human beings in space for generations.

Ultimately the tormenting radio-beam lessened from sheer distance. At last the influence broke off suddenly and Kim's hands on the leads dropped away. The beam fumbled back to contact, and wavered away again, and presently was only a tingling sensation probing for a target the locators could no longer keep lined up.

Then the "Starshine" seemed to lose her frenzy and become merely a derelict. She sped on, giving no sign of life for a time. Then her vision-ports glowed abruptly. Kim Rendell, working desperately against time and with the chill of outer space creeping into the ship's unpowered hull, had found a severed cable which supplied light and heat.

An hour later still, the ship steadied in her motion. He had traced down the gyros' power-lead and set them to work.

Two hours later yet the "Starshine" paused in her flight. Her long, pointed nose turned about. A new element of motion entered the picture she made. She changed course.

At last, as if having her drive finally in operation gave her something of purposefulness, the slim space-ship ceased to look frenzied or frowsy or bemused, and swam through space with a serene competence, like something very much alive and knowing exactly what she was about.

She came to rest upon the almost but not quite airless bulk of Alphin II some thirty hours after her escape from Alphin III. Kim was desperately hungry. But for the lesser gravity of the smaller inner planet, which was responsible for its thinned-out atmosphere, he might have staggered as he walked. Certainly a normal space-suit would have been a heavy burden for a man who had starved for days. Dona, also, looked pale and worn-out when she took from him the things he brought back through the air-lock.

They put the great masses of spongy,

woody stuff in the synthesizer. It was organic matter. Some of it, perhaps, could have been consumed as food in its original state. But the synthesizer received it, and hummed and buzzed quietly to itself, and presently the man and woman ate. The synthesizer was not the equivalent of those magnificently complex food-machines which in public dining-halls provide almost every dish the gourmets have ever invented from raw materials. But it did make a palatable meal from the tasteless vegetation of the small planet.

Kim said quietly, when they had finished eating, "Now we'll find out for certain what Burt intends to do about us." He grimaced. "He's dangerously intelligent. He underestimated me before. He may consider us dead, or he may overestimate us. I think he'll play it safe. I would, in his place."

"What does that mean?" Dona asked wistfully. "We will be able to go to some other planet, won't we, Kim? As if we'd gone in the matter-transmitter in a perfectly normal fashion? Simply to take up residence on another world?"

**K**IM shook his head. "I'm beginning to doubt it," he said slowly. "The discovery that with a bit of hafnium a man can change his psychographic pattern is high explosive. If the Disciplinary Circuit can't pick him out as an individual, any man can defy any government which depends on the Circuit. Which means that no government is safe. I've got to be gotten rid of for the sake of government everywhere in the galaxy."

"But they can't touch us here," said Dona. "We're safe now."

Kim shook his head.

"No. I was too hungry to think, before. We're not safe. I've got to work like the devil. Do you remember your Galactic History? Remember what the Disciplinary Circuit was built up to? Remember the Last War? It's not only the space-ships which went into museums. I'm suddenly scared stiff."

He stood up and abruptly began to put on the space-suit again. His face had become haggard.

"In the Last War there were no battles, only massacres," he said curtly as he snapped buckles. "There was no victory. They used a beam which was a stepped-up version of the Disciplinary Circuit. They called it a fighting-beam, then, and they thought they could fight with it. But they couldn't. It

simply made war impossible. So ultimately they hooded over the projectors of the fighting-beams, and most of them probably fell to rust. But there are some in the museums. If Burt and the others want to play safe, they'll haul those projectors out of the museum and hook them up to find and kill us. And there's no question but that they can do it."

He stepped into the airlock and closed the door, still fumbling with the last adjustments to his space-suit.

Dona was puzzled by his gloomy forebodings. She heard the outer door open. As she stood there bewildered, she heard him bringing more raw food-stuff to the air-lock with a feverish haste. He made two trips, three, and four.

She found herself screaming shrilly because of an agony already past.

It had been a bare flash of pain. It was gone in the fraction of a second, in the fraction of a millisecond. But it was such pain! It was the anguish of the Disciplinary Circuit a thousand times multiplied. It was such torment as the ancients tried vainly to picture as the lot of damned souls in hell. Had it lasted, any living creature would have died of sheer suffering.

But it flashed into being, and was gone, and Dona had cried out in a strangled voice. She was filled with a horrible weakness from the one instant of anguish, and she felt stark panic lest it come again.

The outer airlock door slammed shut. The inner opened. Kim came staggering within. He did not strip off the space-suit. He ran clumsily toward the now-repaired control-panel, his face contorted.

"Lie down flat!" he shouted as he opened his face-plate. "I'm taking off."

The "Starshine" roared from the almost-barren world which was an inferior planet of the sun Alphin, not worth colonization by men. Acceleration built up and built up and built up to the very limit of what the human body could stand.

After twenty minutes, it dropped from four gravities to one.

"Dona!" Kim called hoarsely.

She answered faintly.

"They've got the ancient projectors hooked up," he said as hoarsely as before. "They're searching for us. We were so far away that the beam flashed past. It won't record finding us for minutes, as it'll take time for the response to get back. That's what will save

us, but they're bound to touch us occasionally until we get out of range."

The "Starshine" swung about in space. The brutal acceleration began again, at an angle to the former line of motion.

Ten minutes later there was another moment of intolerable pain. Every nerve in their bodies jumped in a tetanic convulsion. Had it continued, their muscles would have torn loose from their bones and their hearts would have burst from the violence of the fearful contraction. The "Starshine" would have gone on senselessly as a speeding coffin. But again the searing torment lasted for only the fraction of a second.

**B**ACK on Alphin III, great projectors swept across the sky. They were ancient devices, those projectors. They were quaint, even primitive in appearance. But a thousand years before they had been the final word in armament. They represented an attack against which there was no defense. A defense which could not be breached. Those machines had ended wars.

They poured forth tight beams of the same wave-frequencies and forms of which the Disciplinary Circuit was a more ancient development still. But where the Circuit was an exquisitely sensitive device for the exquisitely graduated torment of individuals, these beams were murderers of men. They were not tuned to the psychographic patterns of single persons, but coarsely, in irresistible strength, to all living matter containing given amino-chain molecules. In short, to all men.

And they had made the Last War the last. There had been one battle in that war. It had taken place near Canis Major, where there had been forty thousand warships of space lined up in hostile array. The two fleets were almost equally matched in numbers, and both possessed the fighting beams. They hurtled toward each other, the beams stabbing out ahead. They interpenetrated each other and went on, blindly.

It was a hundred years before the last of the runaway derelicts blundered to destruction or was picked up by other spaceships which then still roved the space-ways. Because there was no defense against the fighting-beams, which were aimed by electronic devices, a ship did not cease to fight when its crew was dead. And every crew had died when a fighting-beam lingered briefly on their ship. There was not one single survivor of the Battle of Canis Major.

The fleets plunged at each other, and every living thing in both fleets had perished instantly. Thereafter the empty ships fought on as robots against all other ships. So there were no more wars.

For two hundred years after that battle, the planets of the galaxy continued to mount their projectors and keep their detector-screens out. But war had defeated itself. There could be no victories, but only joint suicides. There could be no conquests, because even a depopulated planet's projectors would still destroy all life in any approaching space-ship for as many years as the projectors were powered for. But in time, more especially after matter-transmitters had made space-craft useless, they were forgotten. All but those which went into museums for the instruction of the young.

These resuscitated weapons were now at work to find and kill Kim and Dona. In a sense it was like trying to kill flies with a sixteen-inch gun. The difficulties of aiming were extreme. To set up a detector-field and neutralize it would take time and skill which were not available.

So the beams swept through great arcs, with operators watching for signs of contact. It was long minutes after the first contact before the instruments on the projectors recorded it, because the news could only go back at the speed of light. Then the projectors had to retrace their path, and the "Starshine" had moved. The beams had to fumble blindly for the fugitives, and they told of each touch, but only after it occurred. And Kim struggled to make his course unpredictable.

In ten hours the beam struck four times only, because Kim changed course and acceleration so fiercely and so frequently that a contact could only be a matter of chance.

Then for a long time there was no touch at all. In two days Alphin, the sun, had dwindled until it was merely the brightest of the stars, with a barely perceptible disk. On the third day the beam found them yet again, and Dona burst into hysterical sobs. But it was not really bad, this time. There is a limit to the distance to which a tight beam can be held together in space, by technicians who have not space-experience and instinctive know-how.

Within hours after this fifth contact, Kim Rendell found the last key break in the control-cables of the ship, and was able to throw on the overdrive, by which the "Starshine"

fled from Alphin at two hundred times the speed of light. Then, of course, they were safe. Even had the beam of agony been trained directly upon the ship, it could not have overtaken them.

But Dona was a bundle of shrinking nerves when it was over, and Kim raged as he looked at her scared eyes.

"I know," she said unsteadily, when he had her in the control-room to look at the cosmos as it appeared at faster-than-light speed. "I know I'm silly, Kim. It can't hurt us any more. We're going to another solar system entirely. They won't know anything about us. We're all right. Quite all right. But I'm just all in little pieces."

**W**ITH somber brow, Kim stared at the vision-plates about him. The universe as seen at two hundred light-speeds was not a reassuring sight. All stars behind had vanished. All those on either hand were dimmed to near-invisibility. Ahead, where the very nose of the space-ship pointed, there were specks of light in a recognizable star-pattern, but the colors and the magnitudes were incredible.

"We're heading now for Cetis Alpha," Kim said slowly, after a long time. "It's the next nearest solar system. Our fuel-tanks are one-twelfth full. We have power to travel a distance of fifty light-years, no more, and it would take us three months to cover that. Cetis Alpha is seven light-years away, or it was."

"We're going to settle on one of the planets there?" Dona asked hopefully. "What are they like, Kim?"

"You might look them up in the Pilot," Kim said, rather glumly. "There are six inhabited ones."

"You sound worried," she said. "What is it?"

"I'm wondering," Kim admitted. "If Burt and the Prime Board should send word ahead of us by matter-transmitter, to these six planets and all the other inhabited planets within fifty or a hundred light-years, it would be awkward for us. Transmission by matter-transmitter is instantaneous, and it wouldn't take too long for the governments on the Cetis Alpha planets to set up detectors and remount the projectors which could kill us. Burt would call us very dangerous criminals. He'd say we were so dangerous we had better be killed before we land." He paused, and added, "He's right."

"I don't see why they should do anything so cruel."

"We've struck at the foundation of government," Kim said savagely. "On Alphin Three there's a pretense that all men are free, and we know it's a lie. But on other planets they don't even pretend. On Loré Four they have a king. On Markab Two the citizens wear collars of metal—slave-collars—and members of the aristocracy have the right to murder social inferiors at pleasure. On Andrometa Nine the Disciplinary Circuit, and so the government, is in the hands of a blood-thirsty lunatic. The Circuit backs all governments alike, the supposedly free and the frankly despotic governments impartially. We're a danger to all of them. Even a decent government, if there is one, would dread having its citizens able to defy the Circuit. Yet in ten words I can tell how to nullify the one instrument on which all government is based. Once that knowledge gets loose, nothing can suppress it."

Dona sighed.

"I was hoping we could go some place where we would be safe," she said. "Isn't there any such place?"

Kim's laugh was bitter.

"I wonder if there's any place where we can be free," he said. "I planned big, Dona, but it didn't work out. There wasn't another man on Alphin Three who wanted to be free as much as I did. I'd about decided that just the two of us would put on protectors and journey from one planet to another in search of freedom. But then Burt saw you, and you were locked up so you'd go frantic with fear and loneliness. Later they'd have given you a psychological conditioning to cure you of terror, sent you away to Burt's pleasure-palace."

"Why didn't you take me away before Burt saw me?" she asked. "Why did you wait?"

Kim groaned. "Because I wasn't ready. When I realized the danger, I tried to get you, and I was caught. They found out what I had and everything became hopeless. They put me on block to see if anyone would try to befriend me, but I hadn't any friends. I didn't know anyone else who wouldn't have been frightened if I'd told him he was a slave. I threatened the Prime Board with a broadcast, but I'm afraid nobody would have believed me."

"It all happened because of me," Dona said. "Forget what I said about wanting to be safe, Kim. I don't care any more, not if

I'm with you."

Kim scowled at the weird pattern of strangely-colored stars upon the vision-plate.

"We're using a lot of our fuel in trying for Cetis Alpha's planets. I'd like to—well—have a marriage ceremony."

Despite her anxiety, Dona burst out laughing.

"It's about time, you big lug!" she cried. "I was beginning to lose hope."

Kim laughed too. "All right. I'll see if it can be managed. But if warnings have been sent ahead of us, marriage may be difficult."

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## CHAPTER IV

### *Outcasts of Space*

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**L**IKE a silver arrow, the "Starshine" continued to bore on through a weird, synthetic universe, two hundred times faster than light. In the space-ship Kim worked angrily, making desperate attempts to devise a method of nullifying the non-individualized fighting beams with which—now that he was in free space in a space-ship—any attempt to land upon an inhabited planet might be frustrated.

In the end he constructed two small wristlets, one for himself and one for Dona to wear. If tuned waves of the Circuit struck them, the wristlets might nullify them. But if the fighting-beams struck, that would be another story.

Twelve days after turning on the overdrive, which by changing the constants of space about the space-ship, made two hundred light-speeds possible, Kim turned it off. He had previously assured that Dona was wearing the little gadget he had built. As he snapped off the overdrive field, the look of the universe changed with a startling suddenness. Stars leaped into being on every side, amazingly bright and astoundingly varicolored. Cetis Alpha loomed almost dead ahead, a glaring globe of fire with enormous streamers streaming out on every side.

There were planets, too. As the "Starshine" jogged on at a normal interplanetary—rather than interstellar—speed, Dona focused the electron telescope upon the nearest. It was a great, round disk, with polar ice-caps and extraordinarily interconnected seas, so that there were innumerable small continents distributed everywhere. Green

vegetation showed, and patches of clouds, and when Dona turned the magnification up to its very peak, they were certain that they saw the pattern of a magnificent metropolis.

She looked at it hungrily. Kim regarded it steadily. They did not speak for a long time.

"It would be nice there," Dona said longingly, at last. "Do you think we can land, Kim?"

"We're going to try," he told her.

But they didn't. They were forty million miles away when a sudden overwhelming anguish smote them both. All the universe ceased to be . . .

\* \* \* \* \*

Six weeks later, Kim Rendell eased the "Starshine" to a landing on the solitary satellite of the red dwarf sun Phanis. It was about four thousand miles in diameter. Its atmosphere was about one-fourth the density needed to support human life. Such vegetation as it possessed was stunted and lichenous. The terrain was tumbled and upheaved, with raw rock showing in great masses which had apparently solidified in a condition of frenzied turmoil. It had been examined and dismissed as useless for human colonization many centuries since. That was why Kim and Dona could land upon it.

They had spent half their store of fuel in the desperate effort to find a planet on which they could land.

Their attempt to approach Cetis Alpha VI had been the exact type of all their fruitless efforts. They came in for a landing, and while yet millions of miles out, recently reinstalled detector-screens searched them out. Newly stepped-up long distance psychographic finders had identified the "Starshine" as containing living human beings. Then projectors, taken out of museums, had hurled at them the deadly pain-beams which had made war futile a thousand years before. They might have died within one second, from the bursting of their hearts and the convulsive rupture of every muscular anchorage to every bone, except for one thing.

Kim's contrived wristlets had saved them. The wristlets, plus a relay on a set of controls to throw the "Starshine" into overdrive travel through space. The wristlets contained a morsel of hafnium, so that any previous psychographic record of them as individuals would no longer check with the

psychogram a search-beam would encounter. But also, on the first instant of convulsive contraction of muscles beneath the wristlets, they emitted a frantic, tiny signal. That signal kicked over the control-relay. The "Starshine" flung itself into overdrive escape, faster than light, faster than the pain-beams could follow.

**T**HEY had suffered, of course. Horribly. But the pain-beams could not play upon them for more than the tenth of a millisecond before the "Starshine" vanished into faster-than-light escape. They had tried each of the six planets of Cetis Alpha. They had gone rather desperately to Cetis Gamma, with four inhabited planets, and Sorene, with three. Then the inroads on their scant fuel-supply and their dwindling store of vegetation from Alphin II made them accept defeat. The massed volumes of the Galactic Pilot for this sector, age-yellowed, brittle volumes, now had told them of vegetation on the useless planet of the dwarf star Phanis. They came to it. Kim was stunned and bitter. And they landed.

After the ship had settled down in a weird valley with fantastic overhanging cliffs and a frozen small waterfall nearby the two of them went outside. They wore space-suits, of course, because of the extreme thinness of the air.

"I suppose we can call this home, now," Kim said bitterly.

It was night. The sky was cloudless, and all the stars of the galaxy looked down upon them as they stood in the biting cold. His voice went by space-phone to the helmet of Dona, by his side.

"I guess I can stand it if you can, Kim," she said quietly.

"We've got fuel for six weeks' drive," he said ironically. "That means we can go to any place within twenty-five light-years. We've tried every solar system in that range. They're all warned against us. They all had their projectors in operation. We couldn't land. And we'd have starved unless we got to some new material for the synthesizer. This was the only place we could land on. So we have to stand it, if we stand anything."

Dona was silent for a little while.

"We've got each other, Kim," she said slowly.

"For a limited time," he said. "If we use our fuel only for heat and to run the synthesizer for food, it will probably last several

years. But ultimately it will run out and we'll die."

"Are you sorry you threw away everything for me, Kim?" asked Dona. "I'm not sorry I'm with you. I'd rather be with you for a little while and then die. Certainly death is better than what I faced."

Kim made a furious gesture.

"It's recognized, everywhere, that the population of a planet has the right to make all the laws of that planet. We are the population here. We could be married by our own act. But suppose we had children? When our fuel gives out they'd die with us. I think we'd go mad anticipating that. We can't even have each other. We're imprisoned here as they used to imprison criminals. For life. We can have no hope. There is nothing we can work at. We can't even try to do anything."

He clenched his hands inside his space-gloves. Dona looked at him.

"Are you going to give up, Kim?"

"Give up what?" Then he said bitterly, "No, Dona. I'm going to find some excuse for hoping. Some lie I can tell myself. But I'll know I'm simply trying to deceive myself."

There was a long silence. Hopelessness. Futility.

"I've been thinking, Kim," Dona said softly, at last. "There are three hundred million inhabited planets. There are trillions and quintillions of people in the galaxy. If they knew about us, some of them at least would want to help us. There are some, probably, who'd hope we could help them. If we were to think of a new approach to the problem we face, and reach the people who would want to help us, it might mean eventual rescue."

"Signals travel at the speed of light," Kim said. "We'd be dead long before even a tight-beam signal could reach another star-cluster, if there were anybody there to receive or act on it. But there aren't any space-ships except the 'Starshine.' It was the last ship used in the galaxy."

"We've been regarding our predicament as if it were unique, as if nobody else in the universe wanted to be free. As if there was only one problem—ours! I heard a story once, Kim. It was about a man who had to carry a certain particular grain of dust to another place. A silly story, of course. But this was the top grain in a dust-pile. The man tried to find something that would pick

up the one grain of dust, and something that would hold it quite safe. But he couldn't solve the problem. There wasn't any box that would hold a single grain of dust. He couldn't even pick up a solitary dust grain. And how could he carry it if he couldn't pick it up?"

"That's a fable," Kim said, harshly. "There's a moral?"

**D**ONA smiled. "Yes," she said. "There is. He picked up the dust-grain. With a shovel. He picked up a lot of others, too, but that didn't matter. And he could find a box to hold a hundred thousand dust-grains, when he couldn't find a box to hold one."

Kim was silent. Dona nodded and smiled at him.

"If you want a new way to think, how about thinking not just of us and our problem, but the problem of all the people like us who have gone into revolt?" she said. "How about all the people who've been sent to Ades? How about all those who will go in years to come? I don't know the answer, Kim, but it's another way to think. Since we've failed to solve a little problem by itself, suppose we look at it as part of a big one? It's a new approach, anyhow."

There was silence. The bright, many-colored stars overhead moved perceptibly toward what would be called the west by age-old custom. Weird shapes of frozen rock loomed above the space-ship, and the starlight glimmered up on thin hoarfrost which settled everywhere upon this small planet in the dark hours.

Kim stirred suddenly, and was still again. Dona continued to watch him. She could not see his face, but it seemed to her that he stood straighter, somehow. Then, suddenly, he spoke gruffly.

"Let's go back in the ship," he said. "Space-suits are admirable inventions, Dona, but they have limitations. I can't kiss you through a space-helmet."

He did not wait until they were out of the airlock, and she clung to him. Then he grinned for the first time in many days.

"My dear," he said contentedly. "Not only are you the best-looking female I ever saw, but you've got brains. Now watch me!"

"What are you going to do?" she asked breathlessly.

"Too much to waste time talking about it," he told her. "Want to help? Look up Ades in the Pilot. I had completely forgotten I

was a matter-transmitter technician."

He kissed her again, exuberently, and strode for the "Starshine" record-room, shedding the parts of his space-suit as he went. He pulled down the microfilm reels covering the ship's construction and zestfully set to work to review them, making notes and sketches from time to time. The reels, of course, contained not only the complete working drawings of the entire ship, showing every bolt and rivet, but also every moving part in stereoscopic relationship to its fellows, with full data so that no possible breakdown could take place without full information being available for its repair.

Dona watched him furtively as she began the tedious task of hunting through the Galactic Pilot of this sector, two-hundred-odd volumes, for even a stray reference to the planet Ades.

Ultimately she did find Ades mentioned. Not in the bound volumes of the Pilot, but in the microfilm abbreviated Galactic Directory. Ades rated just three lines of type—its space-coordinates, the spectral type of its sun, a climate-atmosphere symbol which indicated that three-fourths of its surface experienced sub-Arctic conditions, and the memo:

"Its borderline habitability caused it to be chosen as a penal colony at a very early date. Landing upon it is forbidden under all circumstances. A patrol-ship is on guard."

The memorandum was quaint, now that no space-line had operated in five centuries, no exploring ship in nearly two, and the Space Patrol itself had been disbanded three hundred years since.

"Mmmm!" Kim said. "If we need it, not too bad. People could survive on Ades. People probably have. And they won't be sheep, anyhow."

"How far away is it?" Dona asked uneasily. "We have enough fuel for twenty-five light-years' travel, you said."

"Ades is just about halfway across the galaxy," he told her. "We couldn't really get started there if our tanks were full. The only way to reach it is by matter-transmitter."

But he did not look disheartened. Dona watched his face.

"It's ruled out. What did you hope from it, Kim?"

"A wedding," he said, and grinned. "But it isn't ruled out, Dona. Nothing's ruled out, if an idea you gave me works. Your story

about the dust-grain hit my mind just right. I was trying to figure out how to travel a hundred light-years on twenty-five light-years' fuel, even though the Prime Board may have sent warnings three times that far. But if you can't solve a little problem, make it a big one and tackle that. That's what your story meant. It's a nice trick!"

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## CHAPTER V

### *Super-Science*

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**D**ONNA was greatly puzzled by what Kim had said. She stared at him, wide-eyed, trying to figure out his meaning. For a moment or two he made no attempt to explain. He just stood there, grinning at her.

"Listen, Dona," he said, finally. "Why did they stop making space-ships?"

Dona smiled uncertainly, only because he was smiling.

"Matter - transmitters are quicker and space-ships aren't needed any more."

"Right!" Kim said. "But why was the 'Starshine' used by my revered great-grandfather to bring the first colonists to Alphin Three?"

"Because—well—because you have to have a receiver for a matter-transmitter, and you have to carry it. Alphin Three was almost the last planet in the galaxy to be colonized, wasn't it?"

"Yes. Why do you have to carry a receiver? No, don't bother. But do answer this one. If two places are both too far to get to, what's the difference?"

"Why, none."

"Oh, there's a lot!" he told her. "The next star-cluster is too far away for the 'Starshine' with her present drive and fuel. To the next galaxy is no farther. But when I stopped trying to think of ways to stretch our fuel, and started trying to think of a way to get to the next galaxy, I got it."

She stared.

"Are we going there to live?" she said submissively. But her eyes were sparkling with mirth.

He kissed her exuberently.

"My dear, I wouldn't put anything past the two of us together. But let me show you how it works."

He spread out the drawings he had made from the construction-records, while she

searched the Pilot. He expounded their meaning enthusiastically and she listened and made admiring comments, but it is rather doubtful if she really understood. She was too much occupied with the happy knowledge that he was again confident and hopeful.

But the idea was not particularly complicated. Every fact was familiar enough. Space-ships, in the old days, and the "Starshine," in this, were able to exceed the speed of light by enclosing themselves in an overdrive field, which was space so stressed that in it the velocity of light was enormously increased. Therefore the inertia of matter, its resistance to acceleration, or its mass, was reduced by the same factor,  $y$ .

The kinetic energy of a moving space-ship, of course, had to remain the same when an overdrive field was formed about it. Thus when its inertia was decreased by the field, its velocity had to increase. Mathematically, the relationship of mass to velocity with a given quantity of kinetic energy is, for normal space,  $MV=E$ . In an overdrive field, where the factor  $y$  enters, the equation is  $M/y, yV=E$ . The value of  $y$  is such that speeds up to two hundred times that of light result from a space-ship at normal interplanetary speed going into an overdrive field.

A matter-transmitter field, as everyone knows now, simply raises the value of  $y$  to infinity. The formula then becomes  $M/infinity, infinity V=E$ . The mass is divided by infinity and the velocity multiplied by infinity. The velocity, in a planet-to-planet transmitter, is always directly toward the receiver to which the transmitter is tuned.

In theory, then, a man who enters such a transmitter passes through empty space unprotected, but his exposure is so exceedingly brief—across the whole First Galaxy transit was estimated to require .0001 second—that not one molecule of the air surrounding him has time to escape into emptiness.

Thus the one device is simply an extension of the principle of the other. A matter-transmitter is merely an enormously developed overdrive-field generator with a tuning device attached. But until this moment, apparently it had not happened that a matter-transmitter technician was in a predicament where the only way out was to put those facts together. Kim was such a technician, and on the "Starshine" he had probably the only overdrive field generator of

space-ship pattern still in working order in the universe.

"All I've got to do is to add two stages of coupling and rewind the exciter-secondary," he told her zestfully. "Doing it by hand may take a week. Then the 'Starshine' will be a matter-transmitter which will transmit itself! The toughest part of the whole job will be the distance-gauge. And I've got that."

**W**ORSHIPFULLY, Dona looked up at him. She probably hoped that he would kiss her again, but he mistook it for interest.

He explained at length. There could be, of course, no measure of distance traveled in emptiness. Astrogation has always been a matter of dead reckoning plus direct observation. But at such immeasurably high speeds there could be no direct observation. At matter-transmitter speeds, no manual control could stop a ship in motion within any given galaxy!

So Kim had planned a photo-gauge, which would throw off the transmitter-field when a specific amount of radiation had reached it. At thousands of light-speeds, the radiation impinging on the bow of a ship, would equal in seconds the normal reception of years. When a specific total of radiation had struck it, a relay would cut off the drive field. Among other features, such a control would make it impossible for a speeding ship to venture too close to a sun.

Kim set joyously to work to make three changes in the overdrive circuit, and to build a radiation-operated relay.

Outside the space-ship the sky turned deep-purple. Presently the dull-red sun arose, and the white hoarfrost melted and glistened wetly, and most of it evaporated in a thin white mist. The frozen waterfall dripped and dripped, and presently flowed freely. The lichenous plants rippled and stirred in the thin chill winds that blew over the small planet, and even animals appeared, stupid and sluggish things, which lived upon the lichens.

Hours passed. The dull-red sun sank low and vanished. The little water-fall flowed more and more slowly, and at last ceased altogether. The sky became a deep dense black and multitudes of stars shone down on the grounded space-ship.

It was a small, starved world, this planet, swinging in lonely isolation around a burned-out sun. About it lay the galaxy in

which were three hundred million inhabited worlds, circling brighter, hotter, much more splendid stars. But the starveling little planet was the only place in all the galaxy, save one, where no Disciplinary Circuit held the human race in slavery.

Nothing happened visibly upon the planet during many days. There were nights in which the hoarfrost glistened whitely, and days in which the frozen waterfall thawed and splashed valiantly.

The sluggish, stupid animals ignored the space-ship. It was motionless and they took it for a rock. Only twice did its two occupants emerge, to gather the vegetation which was raw material for their food-synthesizer. On the second expedition, Kim seized upon an animal to add to the larder, but its helpless futile struggles somehow disgusted him. He let it go.

"I prefer test-tube meat," he said distastefully. "We've food enough anyhow for a long, long time. At worst we can always come back for more."

They went into the ship and stored the vegetable matter in the synthesizer-bins. They returned, then, to the control-room.

"I think it's right," Kim said soberly, as he took the seat before the control-panel. "But nobody ever knows. Maybe we have a space-ship now which makes matter-transmitters absurd. Maybe we've something we can't control at all, which will land us hundreds of millions of light-years away, so that we'll never be able to find even this galaxy again."

"Maybe we might have something which will simply kill us instantly," Dona said quietly. "That's right, isn't it?"

He nodded.

"When I push this button we find out."

She put her hand over his. She bent over and kissed him. Then she pressed down his finger on the control-stud.

Incredible, glaring light burst into the viewports, blinding them. Relays clicked loudly. Alarms rang stridently. The "Starshine" bucked frantically, and the vision-screens flared with a searing light before the light-control reacted. . . .

**T**HREE was a sun in view to the left. It was a blue-white giant which even at a distance which reduced its disk to the size of a water-drop, gave off a blistering heat. To the right, within a matter of a very few millions of miles, there was a cloud-veiled planet.

"At least we traveled," Kim said. "And a long way, too. Cosmography's hardly a living science since exploration stopped, but that star surely wasn't in the cluster we came from."

He cut off the alarms and the meteor-repeller beams which strove to sheer the "Starshine" away from the planet, as they had once driven it backward away from Alphin III. He touched a stud which activated the relay which would turn on over-drive should a fighting-beam touch its human occupants.

He waited, expectant, tense. The spaceship was no more than ten million miles from the surface of the cloud-wreathed world. If there were an alarm-system at work, the detectors on the planet should be setting up a terrific clamor, now, and a fighter-beam should be stabbing out at any instant to destroy the two occupants of the "Starshine." Kim found himself almost cringing from anticipation of the unspeakable agony which only an instant's exposure to a pain-beam involved.

But nothing happened. They watched the clouds. Dona trained the electron-telescope upon them. They were not continuous. There were rifts through which solidity could be glimpsed, sometimes clearly, and sometimes as through mist.

She put in an infra-red filter and stepped up the illumination. The surface of the planet came into view on the telescope-screen. They saw cities. They saw patches of vegetation of unvarying texture, which could only be cultivated areas providing raw material for the food-synthesizers. They saw one city of truly colossal size.

"We'll go in on planetary drive," Kim said quietly. "We must have gone beyond news of us, or they'd have stabbed at us before now. But we'll be careful. I think we'd better sneak in on the night-side. We'll turn on the communicator, by the way. We may get some idea of the identity of this sun."

He put the little ship into a power-orbit, slanting steeply inward in a curve which would make contact with the planet's atmosphere just beyond the sunset-line. He watched the hull-thermometers for their indications.

They touched air very high up, and went down and down, fumbling and cautious. The vision-screens were blank for a long time, but the instruments told of solidity two hundred miles below, then one hundred, then

fifty, twenty-five, ten—

Suddenly the communicator-speaker spoke in a gabble of confusing voices. Dona tuned it down to one. All the galaxy spoke the same language, of course, but this dialect was strangely accented. Presently they grew accustomed and could understand.

"We all take pride in the perfection of our life," the voice said unctuously, "Ten thousand years ago perfection was attained upon this planet, and it is for us to maintain that perfection. Unquestioningly, we obey our rulers, because obedience is a part of perfection. Sometimes our rulers give us orders which, to all appearances, are severe. It is not always easy to obey. But the more difficult obedience may be, the more necessary it is for perfection. The Disciplinary Circuit is a reminder of that need as it touches us once each day to spur us to perfection. The destruction of a family, even to first and second cousins, for the disobedience of a single member, is necessary that every seed of imperfection shall be eliminated from our life."

Kim and Dona looked at each other. Dona tuned to another of the voices.

"People of Uvan!" The tones were harsh and arrogant. "I am your new lord. These are your orders. Your taxes are increased by one-tenth. I require absolute obedience not only to myself, but to my guards. If any man, woman or child shall so much as think a protest against my lightest command, he or she shall writhe in agony in a public place until death comes, and it will not come quickly! Before my guards you will kneel. Before my personal attendants you will prostrate yourselves, not daring to lift your eyes. That is all for the present."

**D**ONA cut it off quickly. A dry, crisp voice came in on a higher wavelength.

"This is Matix speaking. You will arrange at once to procure from Khamil Four a shipment of fighting animals for the Lord Sohn's festival four days hence. Fliers will arrive at the matter-transmitter to take them on board tomorrow afternoon two hours before sunset. Lord Sohn was most pleased with the gheets in the last shipment. They do not fight well against men, but against women they are fairly deadly. In addition—"

"Somehow, I don't think we'll land, Dona," Kim said very quietly. "But turn back to the first voice."

Her hand shook, but she obeyed. The unctuous voice had somehow the air of ending its speech.

"Before going on, I repeat we are grateful for the perfection of our way of life, and we resolve firmly that so long as our planet shall circle Altair, in no wise will we depart from it."

Kim turned the nose of the "Starshine" upward. The stars of the galaxy seemed strangely bright and monstrously indifferent. The little space-ship drove back into the heavens.

After a pause, Kim turned to Dona.

"Look up Altair," he said. "We came a very long way indeed."

There was silence save for the rustling of the index-volume as Dona searched for Altair in the sun-index. Presently she read off the space-coordinates. Kim calculated, ruefully.

"That wasn't space-travel," he said drily. "That was matter-transmission. The 'Starshine' is a matter-transmitter, Dona, transmitting itself and us. I wasn't aware of any interval between the time I pressed the stud and the time the altered field shut off. But we came almost a quarter across the galaxy."

"It was—horrible," Dona said, shivering. "I thought Alphin Three was bad, but the tyranny here is ghastly."

"Alphin Three is a new planet," Kim told her grimly. "This one below us is old. Alphin Three has been occupied for barely two hundred years. Its people have relatively the vigor and the sturdy independence of pioneers, and still they're sheep! We're in an older part of the galaxy now and the race back here has grown old and stupid and cruel. And I imagine it's ready to die."

He bent forward and made a careful adjustment of the light-operated distance-gauge. He cut it down enormously.

"We'll try it again," he said. He pressed the stud....

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## CHAPTER VI

### *Haven at Last*

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**A**N INCREASING sense of futility and depression crept over Kim and Dona during the next few days.

They visited four solar-systems, separated by distances which would have seemed un-

thinkable before the alteration of the over-drive.

There was no longer any sensation of travel, because no distance required any appreciable period of time. Once, indeed, Kim commented curtly on the danger that would exist if they went too close to the galaxy's edge. With only the amount of received light to work the cut-out switch, under other circumstances they might have plunged completely out of the galaxy and to unimaginable distances before the switch could have acted.

"I'm going to have to put a limiting device of some sort on this thing," he observed. "With a limiting device, the transmitter-drive can't stay on longer than a few microseconds. If we don't, we might find ourselves lost from our own galaxy and unable to find it again. Not that it would seem to matter so much."

His skepticism seemed justified. The "Starshine" was the only vessel now plying among the stars. It had been of the last and best type, though by no means the largest, ever constructed, and by three small changes in its overdrive mechanism Kim had made it into something of which other men had never dreamed.

For the first time in the history of the human race, other galaxies were open to the exploration and the colonization of men. It was probably possible for the cosmos itself to be circumnavigated in the "Starshine." But its crew of two humans could find no planet of their own race on which they dared to land.

They approached Voorten II, and found a great planet seemingly empty of human beings. There were roads and cities, but the roads were empty and the cities full of human skeletons. Kim and Dona saw only three living beings of human form, and they were skin and bones and shook clenched fists and gibbered at the slim space-craft as it hovered overhead. The "Starshine" soared away.

It hovered over Makab VI, and there were towers which had been power-houses rusting into ruin, and human beings naked and chained, pulling ploughs while other human beings flourished whips behind them. The great metropolis where the matter-transmitter should have been was ruins. Unquestionably the matter-transmitter here had been destroyed and the planet was cut off from the rest of civilization.

They came fearfully to rest above the planet center upon Moteh VII and saw decay. The people reveled in the streets, but listlessly, and the communicator brought only barbarous, sensual music and howled songs of a beastliness that was impossible to describe.

The vessel actually touched ground upon Xanin V. Kim and Dona actually talked to two citizens. But those folk were blank-faced and dull. Yet what they told Kim and Dona, apathetically, in response to questioning, was so disheartening that Dona impulsively offered to take them away. But the two citizens were frightened at the idea. They fled when Dona would have urged them.

Out in clear space again, on interplanetary drive, Kim looked at Dona with brooding eyes.

"It looks as if we can't find a home, Dona," he said quietly. "The human race is finished. We completed a job, we humans. We conquered a galaxy and we occupied it, and the job was done. Then we went downhill. You and I, we came from the newest planet of all, and we didn't fit. We're criminals there. But the older planets, like these, are indescribably horrible." He stopped, and asked wryly, "What shall we do, Dona? I'd have liked a wedding ceremony. But what are we going to do?"

Dona smiled at him.

"There's one place yet. The Prime Board called us criminals. Let's look up the criminals on Ades. Maybe—and it's just possible—people who have mustered energy and independence enough to commit political crimes would be bearable. If we don't find anything there, why, we'll go to another galaxy, choose a planet and settle down. And I promise I won't be sorry, Kim!"

**K**IM made his computations and swung the "Starshine" carefully. He was able to center the course of the space-ship with absolute precision upon the sun around which Ades circled slowly in lonely majesty. He pressed the matter-transmission stud, and the alarm-bells rang stridently, and there was the sun and the planet Ades barely half a million miles from their starting-point.

It was not a large planet, and there was much ice and snow. The electron-telescope showed no monster cities, either, but there were settlements of a size that could be

picked out. Kim sent the "Starshine" toward it.

\* \* \* \* \*

"Of course, I'm only head of this small city," said the man with the bearskin hat. "And my powers are limited here, but I think we'll find plenty to join us. I'll go, of course, if you'll take me."

Kim nodded in an odd grim satisfaction.

"We'll set up matter-transmitters," he suggested. "Then there'll be complete and continuous communication with this planet from the start."

"Right," said the man with the bearskin hat. He added candidly; "We've brains on Ades, my friend. We've got every technical device the rest of the galaxy has, except the Disciplinary Circuit, and we won't allow that! If this is a scheme of some damned despot to add another planet to his empire, it won't work. There are three empires already started, you know, all taken by matter-transmitter. But that won't work here!"

"If you build the transmitters yourselves, you'll know there's nothing tricky about the circuits," Kim said. "My offer is to take a transmitter and an exploring party to the next nearest galaxy and pick out a planet there to start on. Ades isn't ideal."

"No," agreed the man with the bearskin hat. "It's too cold, and we're overcrowded. There are twenty million of us and more keep coming out of the transmitter every day. The Galaxy seems to be combing out its brains and sending them all here. We're short of minerals, though—metals, especially. So we'll pick some good sound planets to start on over in the second galaxy. Hm! Come to the communicator and we'll talk to the other men we need to reach."

They went out of the small building which was the center of government of the quite small city. There was nothing impressive about it, anywhere. It was not even systematically planned. Each citizen, it appeared, had built as he chose. Each seemed to dress as he pleased, too.

To Kim and to Dona there was a startling novelty in the faces they saw about them. On Alphin III almost everybody had looked alike. At any rate their faces had worn the same expression of bovine contentment.

On other planets contentment had not been the prevailing sentiment. On some, despair had seemed to be universal.

But these people, these criminals, were

individuals. Their manner was not the elaborate, cringing politeness of Alphin III. It was free and natural.

The communicator-station was rough and ready. It was not a work of art, but a building put up by people who needed a building and built one for that purpose only. The vision-screens lighted up one by one and faces appeared, as variegated as the costumes beneath them. They had a common look of aliveness which was heartening to Kim.

The conference lasted for a long time. There was enthusiasm, and there was reserve. The "Starshine" would carry a matter-transmitter to the next galaxy and open a way for migration of the criminals of Ades to a new island universe for conquest.

Kim would turn over the construction-records of the space-ship so that others could be built. He would give the details of the matter-transmitter alteration. No space-ships had been attempted by the inhabitants of Ades, because fighting-beams would soon have been mounted on useful planets, against them, and all useful planets contained only enemies.

"What do you want?" asked a figure in one vision-plate. "We don't do things for nothing, here, and we don't take things without paying for them, either."

"Dona and I want only a place to live and a people to live among who are free," Kim answered sharply.

"You've got that," the man in the bearskin hat said. "All right? We'll all call public meetings and confirm these arrangements?"

**T**HE heads of other cities nodded.

"We'll pass on the news to other cities at once," another man said. He was one of those who had nodded. "Everybody will wish to come in on it, of course. If not now, then later."

"Wait!" Kim said suddenly. "How about the planets around us? Are we going to leave them enslaved?"

"Nobody can free a slave," a whiskered man in a vision-plate said drily. "We could only release prisoners. In time we may have to take them over, I suppose, but on the planet I come from there aren't a dozen men who'd know how to be free if we emancipated them. They don't want to be free. They're satisfied as they are. If any of them want to be free, they'll be sent here, eventually."

"I am reluctant to desert them," Kim answered slowly.

"Count, man," the man with the bearskin hat cried. "There are three hundred million inhabited planets! All of them but Ades are ruled by Disciplinary Circuits. If we set out to liberate them, it would take one thousand years, and there are only twenty millions of us. We'll designate just one of us to stay on each planet to teach the people to be free again. Otherwise we wouldn't do a tenth of the job and we'd destroy ourselves by scattering. Why, hang it all, we'd be tyrants! No! We go on and start on a new galaxy. That's a job worth doing. We'll keep a group of watchers here to receive the new ones who come here into exile and forward them. Some day, maybe, we'll come back and take over the old galaxy if it seems worth while. But we've a job to do. How many galaxies are there, anyhow, for us and our children and our children's children to take over?"

"It's a job that will never be finished," another voice said. "That's good!"

\* \* \* \* \*

There were trees visible from the window of the house that had been offered by a citizen for Kim's and Dona's use. The sun went down beyond those trees, with a glowing of many colors in the foliage. Kim had never watched a sunset before except upon the towers and pinnacles of a city. He had never noted quite this sharp tang in the air, either, which he learned was the smell of fresh growing things.

"I think I'm going to like living like this," he said to Dona. "Have you noticed the way people act? They don't behave as if I were important at all, in one way. They seem to think I'm commonplace. But I've never before felt so definitely that I matter."

"You do, Kim, darling," Dona said, wisely. She stood close beside him, watching the sunset too. She looked up at him. "You matter enormously, and they know it. But to themselves they matter, too, and when they listen to you and agree with you it's because they mean it, instead of just citizen-like politeness. It is good. I think it must be a part of what we've been looking for. It's a part of freedom, I suppose."

"And you," Kim said. "Do you feel important too?"

She laughed at him and pressed close.

"My dear!" she said. "Could I help it? Can any woman help feeling important on her wedding-day? Do you realize that we've been married two whole hours?"

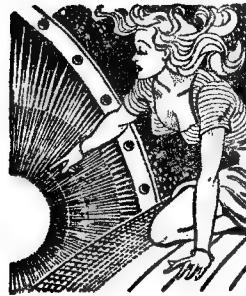
# SIREN SATELLITE

By ARTHUR K. BARNES

*A daring crew of spaceteers faces the prospect of turning into freezing, starving men, crawling about in torture—unless Gerry Carlyle wins a devouring monster as her ally!*

## CHAPTER I

### *Ill-Starred Voyage*



GERRY CARLYLE draped her very lovely form over the functionally-designed Plastair and nibbled moodily at a long, bronze curl. She had just discovered how vulnerable she was and, like all important public figures who happen to find themselves in such a situation, she was annoyed.

That she was important, no one could deny. Gerry Carlyle was perhaps the most famous woman on Earth. She was beautiful. She was rich. And she was amazingly successful in a profession so rigorous and exacting that not one man in a thousand would dare face the dangers and hardships and excitement that she faced almost daily.

Queen of the space-rovers, in her mighty ship, *The Ark*, this slim girl covered nearly the entire Solar System in her quest for exotic and weird life-forms to be returned alive for the edification and astonishment of the public at the London Interplanetary Zoo. Her name was a byword, and she was respected and loved throughout the System for her courage, as well as her femininity.

And yet, for all this, Gerry Carlyle was very vulnerable in one regard. Like all champions, she couldn't pass up a dare or a challenge, no matter what its nature. She had to take on all comers, and she had just realized that fact.

"The nerve of that fellow!" she muttered,

then looked up in annoyance at her fiancé, Tommy Strike. "You're none too sympathetic, either. What are you pacing around for?"

Strike was medium tall, and darkly good-looking in a rugged sort of way. He grinned tolerantly at her, the grin that always made her heart stumble.

"Just trying out the new flooring," he said.

The pilot room and main corridors of the *Ark* had just been refloored with zincal, the new metal, plastic, air bubble combination which gave under the foot like an expensive rug, but which never showed signs of wear.

Gerry pouted.

"Well, you might show a little interest," she said. "After all, you're second in command around here." But Gerry was not the pouting kind, so the pout was not very successful.

"You've been mumbling to yourself for the past half hour," Tommy Strike pointed out. "How do you expect me to know what it's all about? If you care to commence at the commencement, in words of one syllable, so my dull wits can grasp whatever it is that has so upset you, perhaps I'll listen."

Gerry gave her man a smoky, heavy-lidded glance, smiled, and made room for him on the Plastair.

"It's this fellow Dacres," she began. "He came around the other day with a business proposition. Said he wanted to use *The Ark* to rescue his brother whose expedition has apparently cracked up on Triton. He offered to finance the whole thing, with me furnishing the regular crew. He would simply be a passenger. Naturally, I turned him down. Gerry Carlyle does not run a taxi service."

"Triton, eh?" Strike grunted. "Neptune's only satellite. And with a very nasty repu-

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A COMPLETE GERRY CARLYLE NOVELET

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"So," said Gerry Carlyle, "it's mutiny"

tation. Isn't that the place that's never been explored?"

"That's the place, all right. Two or three expeditions tried it. None ever returned."

"Oh, yeah. I remember reading about that. They call it the 'siren satellite.' Very dramatic. And also a very long way from here. Your pal Dacres must be well off to be able to afford such a jaunt."

Gerry tossed her blond hair.

"He's no pal of mine!" she said, hotly. "Wait till you hear what he did! He's blackmailing me!"

"Ah?"

"He's gone to all the papers and telefilm services and spread the story that I refused to rescue Dacres' brother because the rumors about Triton have scared me off. How do you like that?"

**S**HE leaned over, snapped the telenews switch, and pointed to the wall-screen. A headline flashed on.

#### GERRY CARLYLE SPURNS RESCUE PLEA!

Angrily, Gerry spun a dial to reveal a second lead.

#### QUEEN OF HUNTRESSES SHIES AWAY FROM TRITON CHALLENGE!

Miss Gerry Carlyle, the Catch-'em-Alive girl renowned the world over for her adventures while raiding the Solar System for weird monsters, today rejected the plea of Lawrence Dacres that she put her space-ship, *The Ark*, at his disposal for the rescue of his brother, believed lost on Triton.

Mr. Dacres alleges that fear of unknown forces upon the lonely, unexplored satellite of Neptune prompted the refusal.

It is true that Triton's record of being the grave of more than one ill-fated expedition is cause enough to make anyone wary. But if, as is asserted, something has been discovered at last which gives pause to the redoubtable Miss Carlyle, then man, indeed, bites dog.

Gerry's furious fingers again moved, and a third line of heavy type declared:

#### SWEETHEART OF SPACE SHUNS SIREN SATELLITE!

Strike sniggered. Gerry interrupted.

"I had a few words with the editor who dreamed that one up," she said with quietly vicious satisfaction. "He is now resting in a sanitarium."

Strike sighed.

"I can see what an awkward position it puts you in," he admitted. "The Dacres fellow's already tried the case in the press and found you guilty of something or other."

He rose, walked around behind Gerry. Presently his voice came again, musingly.

"Now let's see. Triton. Diameter, three thousand miles. Revolution, five days, seven hours, three minutes. Stellar magnitude—"

"You sound like an encyclopedia." Gerry twisted around, trying to see.

"That's because I'm reading from an encyclopedia, I'll bet... Stellar magnitude at opposition, thirteen. Retrograde motion. Gravity, two and a half times that of Earth—Oh, yeah. That's why they call it the 'siren satellite.' It lures the unwary space-traveller close, then hauls him in with the unexpected gravity... Mmm. Composed of matter not native to the Solar System—hence the terrific mass. Believed to be a wanderer from space trapped by Neptune. That would explain the retrograde motion."

Brisk, muffled footsteps sounded along the corridor, followed by an impatient knock on the pilot room door.

"That'll be friend Dacres now." Gerry grimaced. "Come in!"

Dacres made his entrance. He was not self-important, but he was imposing, and whenever he entered a room he would inevitably command attention. He was tall, slender in the manner of a rapier, and blond. He bowed stiffly.

"Good morning, Miss Carlyle," he said.

Gerry almost expected to hear his heels click. She introduced the two men, mentally compared them, as all women do.

"So you've come to apologize for your insufferable conduct?" she said then.

"I've come to see if you have reconsidered your unfriendly and uncooperative attitude," he amended.

Gerry began to incandesce.

"Why, you—you—" she could scarcely contain herself. "You deliberately spread lies and false insinuations through the press, making me a laughing-stock, blasting my reputation, impugning my courage! And now you have the crust to pretend that I'm in the wrong for not throwing my whole organization into the lap of every would-be joyrider who comes along! You're nothing but a blackmailer!"

Dacres refused to be stampeded.

"Sorry to exert pressure on you in such

fashion, Miss Carlyle," he said, unperturbed. "As you imply, however, I have no scruples. None, at least, when my brother's life is at stake."

Gerry found it hard to answer that one. She had tried unsuccessfully to answer it ever since Dacres had first spoken to her. The blond man knew this, and pursued his advantage.

"While we argue here," he pointed out, "my brother and his crew may be dying—slowly being crushed flat by the terrible gravity. He weighed two hundred on Earth. Up there, he'd weigh five hundred. The human heart simply cannot stand that kind of punishment. It'll quit."

THE words conjured an unpleasant picture of freezing, starving men crawling painfully about like injured crabs, praying for quick release from agony. Gerry winced.

"Weren't the explorers equipped with degrav units?" she asked.

"Yes, but how long will they last? A couple of weeks at low power, possibly. Then—" Dacres brought his palms together with slow expressiveness. "That's why every second is precious."

Gerry felt cornered, and she glanced at Tommy Strike in an exasperated appeal for reinforcement. But Strike was strictly neutral. If anything, he found her predicament amusing, taking a perverse delight in seeing her humbled by the opposite sex.

She made one last try.

"Why pick on me, Mr. Dacres?" she asked. "Why is it so essential to have my ship, and only mine?"

"Rocket ships visiting Triton, however powerful, have so far all cracked up. Complete safety demands the tremendous power of a centrifugal flyer, like *The Ark*. How many such ships exist today? A handful. And how many of those are owned by other than government agencies? Only yours, Miss Carlyle. If you refuse me, I shall have to try and find a lesser ship. But I'm staking a great deal on having publicly put you into an intolerable position, so you can't afford to turn me down."

Gerry gasped. The fellow was certainly frank about it. What's more, he seemed to have all the answers. If she were ready to quit her romantic and risky business and settle down, she could safely say no. But as long as she wished to remain queen of the space-rovers, she dared not let a single

questionable act stain her record.

She looked despairingly at Strike, but he simply shrugged, grinning faintly.

"Well, here we go again," he said.

Dacres tendered an olive branch.

"There might, of course, be some interesting alien life-forms on Triton. After the rescue is completed, you'd be welcome to try for a couple of specimens, if that would enable you to—er—save face."

Gerry felt her temperature climb to a new high, and she counted ten, then stood up.

"You are insulting, Mr. Dacres," she announced. "I do not like you. The only reason my fiancé has not knocked you down is because he feels I sometimes think too highly of myself, and that a dressing down does me good. However, your brother's peril and your own machinations force me to accept your proposition. Come back in an hour with your checkbook and your attorney. Our contract will be ready for you. We can leave at dawn."

Dacres bowed again, very tall and ever so slightly triumphant.

"Thank you," he said. "I regret our inability to be friends but, after all, that is unimportant. I'm sure we'll manage a successful and uneventful voyage."

He stalked out, ramrod-stiff.

"Whew!" Strike shook himself like a big dog. "The electric potential of this room must be terrific. Think I'll go outside and ground myself. I've never seen a fellow so completely right every time he opens his mouth. Most disconcerting."

And Tommy Strike gave out with a roar of accumulated laughter.

Lawrence Dacres seemed to have been in error once, however, when he predicted a journey without incident. Just before reaching Mars, five of *The Ark*'s crew became violently ill after dinner.

"Food poisoning," was the verdict in the Martian hospital. The men were out of danger and would be released in two or three days, but as *The Ark* had left Earth with only a skeleton crew, in order to save expense, a serious problem was now at hand. Dacres, frantic at delay which cost him hundreds of dollars a day, suggested that he recruit replacements at the Martian spaceport.

"We must get under way at once, Miss Carlyle," he said, "or I'll go broke just waiting here. After all, it wasn't your key men who became ill, just subordinates. The chief engineer, for instance, is all right. He could

get along with new men for just this one trip."

It was true. On a routine journey such as this, Gerry had no need of the special qualifications and training which made those sick men expert hunters, trappers, and zoologists, as well as engineers. Any good mechanics could replace them.

So she agreed. But she couldn't help feeling that, conceived in anger and already stricken with misfortune, the expedition was ill-starred.

## CHAPTER II

### *Intrigue in Space*

**I**T WAS Tommy Strike who, several hours out from Mars, stumbled upon the extraordinary and amusing scene which suggested that the journey was indeed fated to be anything but routine. Glancing in through a half-open door in the crew's quarters, he observed a man, a total stranger, going through weird antics. The newcomer was holding his head very gingerly between his hands, as if it were about to explode, and walking around the small but comfortable room with awkwardly high steps.

The man glared at himself in the mirror, and Strike grinned at the homely reflection the man saw. It was epitome of the battered, broken-down boxer—flat nose, lumpy cheeks, scar tissue under the brows, cauliflower ears.

The man with the clownish face now staggered to a porthole to look out. Then he reeled back with a stricken, bewildered expression. He groaned piteously, obviously in the grip of a hangover to end all hangovers.

Strike leaned quietly against the door jamb, to watch. Gradually, both he and the broken-down pugilist became aware of voices in the next room, voices hushed but intense. The ex-bruiser wobbled over to the door and cocked his tin ear.

"Monk, you fool!" came the voice. "How the devil did that tramp get aboard?"

There was a shuffle of feet.

"Boss, I swear I dunno," came the conciliatory reply. "We didn't expect you right away, so we was havin' ourselves a time."

"A drunken carousal, you mean?"

"Okay, have it your way. Anyhow, when your message come, we headed for the spaceport, but everything was pretty happy, see,

an' this fellow must have got sort of attached to the party, an'—" Monk's voice trailed away. "As a matter of fact, I don't much remember exactly what did happen."

"So when you checked in, seven souse-pots instead of six, no one thought anything of it. Beautiful!" The invisible speaker was very bitter. "Well, the tramp's aboard now, and the damage is done. I suppose I should have met you myself. Question is—"

The lumpy-faced man suddenly shoved open the door. It was like a French farce, with Strike able to see all that happened, while remaining unobserved. Six tough-fisted mechanics, the men recruited by Dacres in the emergency, were looking very ill at ease as Dacres tongue-lashed them. Strike frowned slightly. He would have to remind the tall, blond Dacres that it was the captain alone who had the right to discipline the men.

Then the unidentified, clown-faced man spoke.

"You!" he snapped out. "Who're you?"

"Lawrence Dacres, and keep a civil tongue in your head."

"You shanghaied me aboard this here spaceship, Dacres, an' I demand you turn around and take me back to Mars pronto. Or else!"

There was a round of mirth, and Strike moved nearer to watch the rest of the scene. The strange, lumpy-faced man purpled.

"I mean it," he declared. "D'you know who I am?"

"Don't tell us. Let us guess." The heavy irony came from Monk, the man who had been trying to explain how the extra person had come aboard at the spaceport. He had a receding forehead and long, hairy arms.

"I'm Kid McCray, the Martian middle-weight champion, that's who!"

The crewmen dissolved into the helpless hilarity of complete disbelief, and Strike fought back his own urge to laugh. Middleweight McCray ranted and stormed, trying to convince them of his sincerity. It was useless. In fury, he doubled his fists and sprang at Dacres.

However, Strike decided, whatever ring experience McCray might have had didn't include the trickiness of moving out in space. His lunge carried him well off the floor. He sailed, floundering, like a man in deep water, awkward and off balance. In this defenseless position, the blond man's punch caught him flush on the jaw and slammed him head-first

against the steel wall.

McCray took a full count.

"Nobody can do this to me," he muttered dizzily, and was still shaky when he managed to stand again.

The crew men were weeping in their joy.

"The champ's off form today!" the guffawing Monk yelled. "He ain't so good in the light gravity!"

**S**TRIKE thought it about time to intervene, so he stepped into the room. There was a sudden silence of frozen attitudes and wary eyes.

"Oh, Captain Strike," Dacres said, relaxing. "Glad you're here. If you overheard what's been going on, you realize that we have a stowaway aboard with some peculiar notions in his head."

"I understand, Dacres." Strike tried to look sternly at the groggy, clown-faced McCray. "Just how did you get on the ship?"

"Well,"—McCray screwed up his face in thought—"Well, there was the fight, see? First championship bout ever held on Mars. I win by a *kayo* in the eleventh. Then we celebrated—parties, taverns, lots o' girls. . . Then I don't remember nothin' till a few minutes ago." He looked very baffled. "Doncha believe me?"

Obviously, the various celebrants had somehow formed into one big party during the gay evening. It sounded like a fight night. There probably had been a fight. But as for a man with a face like McCray's being a champion—

Strike and Dacres exchanged sad smiles, and Dacres made a cranking motion with one finger to his temple.

"Perhaps a few weeks' work will straighten out your thinking, McCray," Strike said. "We'll go and see my partner, and you'd better act sensibly because technically you're subject to severe penalties. Here. Slip these on."

He kicked over a pair of gravity clogs—thick metal plates containing a power unit to adjust the wearer against differing gravities. Straps fastened them to the feet. Everyone else was wearing them. They enabled scrambled-ears McCray to follow Strike and Dacres up the long corridor to the elevator leading to the flight deck.

Tommy Strike noted with satisfaction McCray's reaction, as the pugilist's eyes fell on the glorious, copper-blond beauty of the ship's famous mistress.

"Holy Smoke!" McCray goggled at her. "You're Gerry Carlyle!"

In the questioning silence that followed, Strike explained.

"We have a stowaway, Gerry," he said. "Unintentional. Says he came aboard by mistake in a moment of alcoholic aberration. No one of us realized he wasn't one of the new men. He seems to be a bit punch-drunk."

The uninvited guest snapped out of it with a roar.

"Punch-drunk?" he yelled. "Listen, you! I'm Kid McCray, middleweight champ of Mars! I got influence, an' if you don't take me back to Mars right now, there'll be trouble!"

Strike, Dacres, and Gerry Carlyle doubled over with laughter.

"O-oh-h!" gasped the girl. "Those Martian liquors! I've heard they frequently bring on delusions of grandeur!"

However cool a ringman McCray might once have been, he had now had too much. He advanced vengefully upon Strike, his every thought written plainly on his battered face. Remembering his earlier experience, the fighter shuffled forward with determined caution. As a result, Strike found him practically a sitting duck.

Being in the light-heavyweight class, Strike promptly accepted the challenge and clubbed the intruder with a whistling right cross.

McCray spun round, fought clumsily for balance on the gravity clogs, then crashed, bouncing his head off the binnacle. "This just ain't possible," he muttered faintly.

"The 'champ,'" Dacres declared in an amused voice, "isn't so good with the foot-work this morning."

"Overtrained, perhaps," offered Gerry.

There was more gaiety.

"Well, we can't put back to Mars, of course," Strike said then. "Better put him to work."

Actually, Strike was not at all sorry. McCray was probably in for some amusingly rough and humiliating hours. He would be assigned to the most menial tasks. He would be referred to derisively as "the Champ." He would have to learn that Space Law dealt ruthlessly with men with too-ready fists. But The Ark was on a grim mission, and Strike felt sure that McCray, once he found his place, would be good for many tension-relieving laughs. . . .

**K**ID McCray was surprisingly persistent, however. Two days later, he button-holed Strike and urged him to radio Mars, on the theory that if there were a missing middleweight champion, that might prove his story.

"Too bad you didn't think of that before," Strike smothered a grin and pointed out solemnly. "We're already too far from Mars for the limited capacity of our ship's radio."

No whit discouraged, McCray again petitioned the captain next day. He had learned the story of Dacres' brother, and the peculiar, untimely illness which had reduced the crew of *The Ark*.

"Don't that seem kinda odd, Captain?" insisted McCray, striving to look mysterious. "An' could anybody be so lucky as to find a half-dozen number-one mechanics on Mars at a moment's notice? Maybe we better turn back right now!"

Strike got endless amusement from the little battles of wits in which McCray clumsily offered varied reasons for returning to Mars. But the ex-fighter's point about Dacres' substitute crewmen stuck in his mind. He remembered, too, the conversation he'd overheard the day McCray had awakened on the ship. The exact words escaped him, but hadn't Dacres been speaking as if to long-time acquaintances? The sudden silence, the suspicious looks when he shoved open the door and entered the room—had they meant anything?

Feeling very foolish, Strike dropped down to talk with Baumstark, the chief engineer, and was quickly reassured.

"It's working out fine, sir," the engineer said. "The new fellows are really topnotch engine men, especially that Monk. Not much to look at, but always asking questions. Probably could run the ship himself right now!"

After that, even McCray seemed to give up trying, tending strictly to business, as the mighty ship fled at astronomical speeds through the vast remoteness of the space-ways. Days drifted into weeks. One by one, the major planets' orbits passed astern. Then, another of those queerly unrelated incidents ruffled the surface of the quiet routine.

McCray was involved, as usual. On an inspection tour, Strike came upon him sprawled on the floor of one of the cabins, nursing a welt above his ear. Standing over him was Monk, a wrench in one hand and a

wicked-looking proton pistol in the other.

"Nosey!" Monk was shouting. "Buttinsky! What's the idea?"

McCray explained fuzzily that he had just been searching for a tool in Monk's space-bag, and accidentally found the gun.

"Well, next time ask me first," Monk cried. "Besides, finding I got a gun is nothin' to get excited about. We're goin' to a strange world, an' it might be dangerous, see? We might need some weapons."

Tommy Strike chose that moment to make his presence known. He lashed Monk verbally, took the gun from him.

"It's the officers' duty to take care of the arsenal aboard this ship. No weapons are ever permitted in the men's quarters."

Monk scuffed his feet, made a handsome apology, and he and McCray went back to work. Strike watched them pensively, recalling past events, wondering if there were a pattern. On impulse, he searched the belongings of Dacres' recruits, and found exactly nothing out-of-the-way. Sheepishly, he returned to the flight deck, resolved not to bother Gerry with his unworthy suspicions.

That proved a mistake. The mystery came to a sudden and explosive head before the next changing of the watch. They were only one day out from Triton, and Gerry was making telescopic observations of the satellite.

"I've checked Triton's rotational speed, Tommy," she said. "It spins once around on its axis every forty-five minutes or so. Really rolling down this cosmic bowling alley, eh?"

Those were the most important words Strike had ever heard in his life, though he did not realize it then. Instead, he made idle conversation.

"Yes," he said, "but there's precedent for it. Look at Jupiter—twenty-nine times as large as this marble, counting its atmospheric envelope, rotating once in a bit over nine hours."

As if the words were a cue, the door burst open, and Dacres, Monk, and the other substitute crewmen shouldered through. All were armed. In a split second, the entire plot, portions of which had been tantalizing Strike for days, was clear.

"So," said Gerry Carlyle, "it's mutiny."

Dacres nodded, smiling, and interpreted correctly her quick glance down the hall.

"It's no use," he said. "All the others have been bound and gagged."

## CHAPTER III

## Murder With Mathematics

**H**ALF of Strike's mind boiled with astonishment and self-revilement. It was his fault. He should have known. McCray had practically proved this was coming, but he had insisted on laughing the fellow off as a "character." He had been criminally blind and stupid.

Yet the other part of his brain admitted his actions had only been natural, that no one in his senses would have credited Dacres with the foolhardy idea of stealing the most famous spaceship in the entire System. It was just crazy.

Dark-faced with fury, Strike put this thought into words.

"Just what d'you think you're going to do, anyhow?"

"We're taking over *The Ark*, camouflaging it, and using it for a short career of piracy among the Outer Planets. Perhaps a half-dozen quick strikes, then we all retire wealthy before the law even starts to hunt."

There it was, beautifully simple, grim, dastardly.

"And what about us?" asked the girl.

"So sorry." Dacres smiled hypocritically. "You and your crew will be packed into a lifeboat and marooned on Triton. Another regrettable accident to another would-be explorer of the 'siren satellite'."

"That's murder!" Strike lashed out. "We'll die there, horribly, crushed flat by that gravity."

Dacres warned Strike back with his gun.

"Tut, tut, Captain," he said. "You didn't think we could afford to leave you alive, to carry tales to any possible rescue parties, did you? It's all part of my scheme. Everything must appear accidental."

Strike looked at his fiancée, and was never prouder of her. If the mutineers expected tears or hysteria, they must have been shocked at the hardy defiance of her next remark.

"You're a fool, Dacres, if you don't kill us all right now."

There was implacable hate in the girl's voice, but Dacres merely grinned.

"Oh, no, Miss Carlyle," he said. "No shooting. No hint of foul play. I see what's in your mind. You foresee furious rescue oper-

ations when *The Ark* becomes overdue. Naturally, Triton will be searched, and you intend to leave an explanatory message where it will be easily found.

"Spare yourself the trouble, please. We'll give you a few days—it'd be interesting to see just how long the human heart can endure such strain—then visit your little tomb on Triton. Any messages subsequently found will be written by me, neatly explaining the destruction of *The Ark* in space, with no suggestion of criminal action."

Hopelessness was a knot in Strike's stomach. The plot was really ironclad. But even now Gerry seemed unshaken. She looked around the group of thieves and murderers as if memorizing their faces for future reference. Then she saw McCray, hiding shamefacedly in the rear. Her eyebrows raised.

"You, too, 'Champ'? I'm disappointed."

The pugilist crimsoned.

"The 'Champ' had a silly idea that he could remain neutral in this game," Dacres explained easily. "We can use a muscular man, so we gave him his choice. He chose to live, with us."

Gerry nodded.

"Just for curiosity," she said, "do you really have a brother?"

"No. The lost expedition was just window-dressing. Rather nicely done, I thought. We actually arranged for a ship to leave Mars a few months ago under my charter, in case you checked on it."

"Swine!" Gerry Carlyle spat the word, and swung her right fist in a haymaker that caromed off Dacres' nose. Holstering his gun, he wiped his watering eyes and started for Gerry.

At that instant, something happened to McCray. It seemed to Strike that the man's natural instincts as a fighter and sportsman got tangled up with his admiration for a beautiful girl. At any rate, moving expertly now on his clogs, he slid before Gerry.

"Look, lady," he said. "Always hit straight, not roundhouse. Like this."

Then he cracked the blond man a beautiful punch, flush on the button. Dacres fell, out cold. Instantly, Strike whirled on Monk, who was about to draw a bead.

"Remember what he said!" he shouted. "No gunplay!"

For heart-stopping moments, sudden death trembled in the air, as Monk squinted murderously at McCray down the glittering rod

of his proton pistol. McCray drew breath again only when Monk drew back with a harsh laugh.

"Okay, bum," Monk said. "It's only a matter o' hours, anyways. Seein' as how you decided to play with the losin' team!"

Strike almost smiled when he saw McCray's transparent face register appalled realization. Kid McCray gulped, looked anxiously at Gerry Carlyle, and then grinned broadly as she winked at him in wordless thanks.

"Oh, well," he said, strutting ever so faintly, "it ain't when a fellow goes, it's how he goes!"

It was plain Kid McCray considered himself in distinguished company.

**T**OMMY STRIKE examined his sweaty palms, marked where the nails had dug in when he fought down the suicidal impulse to fling himself at Dacres' piratical crew. Then he looked around the cramped confines of the tiny lifeboat.

Though intended for six, nine persons were packed in the craft. Save for the slap-happy boxer, McCray, whose heart was certainly bigger than his brains, all the occupants were intimate friends, welded together in a unit by adventure and danger, failures and successes. Young Barrows, Kranz, Baumstark—with all of them their proudest boast was that they were envied members of Gerry Carlyle's entourage.

And now had come the ignominious end of the trail. After each recent hairbreadth exploit, Strike had vowed he would wed Gerry and they would settle down on some peaceful suburban estate. But the demons of excitement in their blood had not been conquered. So, seemingly, the pitcher had gone once too often to the well. Death was the end of this adventure, sure and horrid. And Strike felt himself to blame.

The seething silence, brought on by the enormity of Dacres' daring to lay a hand upon their beloved leader, was broken by Kranz.

"I hear the gravity down there is two-and-a-half Gs," he said. "We might as well make a break for it right now. Go down fighting, anyhow."

Strike shrugged.

"It's no use. Dacres has—"

A sudden thought made Strike examine the fuel gauge, but though there was enough fuel to take them to Triton, there was not

nearly enough to enable them to try a dash for the nearest outpost in the Uranian System. He ground his teeth.

"No, that bird has thought of everything," he sighed. "I said that the first day I talked to him. It's still true."

"Exception, please," Gerry interposed suddenly. "Mr. Dacres has forgotten one thing—mathematics. Just take it quietly, men. Our inning may yet come."

Tommy Strike and the others stared at her, forlorn hope fighting with despair. He couldn't see any value in calculus when a man suddenly found himself crushed to the ground by a weight of four hundred and fifty pounds. It would be a task even to pick up a pencil. He was about to argue the matter when a sudden lurch threw them all into a tangle at one end of the little rocket-car. It was too late for debate now—Dacres had thrown the lever catapulting the lifeboat into space.

To the tiny craft's left, and slightly above, *The Ark*, enormous and glittering, receded with uncanny effortlessness. Below and to the right, dollar-size in the cold blackness of interstellar space, the Siren Satellite beckoned irresistibly.

Strike slid into the pilot's seat, for once at a loss as to what to do, and stared at Gerry questioningly. She nodded.

"Triton," she said.

The tubes bucked with miniature thunder, as Strike deftly manipulated the controls. It was but a three-hour journey, but it loomed as the most frightful three hours any of them had ever dreamed of enduring.

While still an hour out from Triton, the pull of that mighty gravity was already making itself felt. If anyone had occasion to move, he took slow, ponderous steps. The increasing weight was endurable while lying prone, but even so there were whimpers, as invisible but relentless fingers seemed striving to tear loose the internal organs themselves. Barrows was suddenly sick on the floor, and the sight promptly urged three of the others to follow suit.

Strike wound a coil of light rope around himself as an abdominal support. It afforded some relief, but nothing could take the terrible strain from his heart, as it laboriously fought to pump the sluggishly heavy blood through pinched veins. He speculated dispassionately on how long a heart would hold up.

He glanced at Gerry. She lay with her face

hidden in her arms, breathing asthmatically. Slowly, her head raised, as if it weighed a ton.

"Tommy," she spoke thickly, with a tongue that would not obey. "I'm going to—pass out. Head toward—equator—"

**S**HE slumped. Though Gerry was vigorous and athletic, her frame was never intended to sustain the ordeal it was subject to now.

Strike saw the others, especially McCray, were taking it fairly well. Most of them had endured several Gs for short moments while stunting or test-flying, but none had ever experienced anything like this ceaseless drag which crushed the chest and threatened to pull the very flesh away from the bones.

Sweat blinded Strike momentarily, and with a leaden hand he wiped it aside. Triton, pale and featureless, loomed large now, revolving with visible motion. The crisis was at hand. The tiny lifeboat plunged with sickening speed, and Strike fought the controls with corded muscles. The jets blasted full in a savage battle against the gravity, and it took all Strike's skill to keep the ship from rolling off its delicate position atop that vital column of flame.

As the craft thundered in over the swiftly sliding terrain, only luck averted disaster, for Strike's anchored fingers were too slow for the exacting manipulation of a landing. The craft plowed in fast and hard, swathed in flame, skidding with bone-racking jerks.

The lifeboat made one complete somersault and came to rest—right side up.

The nine castaways sorted themselves out, untangled broken safety belts, stood up, and—suddenly, the realization of a miracle dawned upon them!

Like a bestowing of a soothing, deific benison, the grip of that terrifying, crushing gravity was gone. Utterly gone!

They weighed no more, apparently, than they ever had on Earth!

Each gave thanks or expressed his joy in his own way, but the dominant emotion was aptly expressed by McCray.

"Gosh!" he said. "I don't get it!"

None of the men understood the phenomenon, but a horrible suspicion was growing in Strike's mind. He turned to stare at Gerry, who had revived at once with no ill effects.

"You knew this was going to happen!" he said accusingly. "That's what you meant

when you babbled about Daeris and his mathematics. Why didn't you tell us, spare us some of the mental agony?"

"Sorry," Gerry blushed faintly. "But I wasn't at all sure. It would have been an awful disappointment if it hadn't come off."

"Never mind that. What's the angle? Out with it! How come?"

Gerry grinned in reply to this bombardment of queries.

"Patience, m'lord, and I shall demonstrate." She found pencil, paper, and slide rule and commenced calculating. "The key to the problem is the fact that Triton's rotation, once every forty-five minutes, develops a centrifugal force at the equator, the thrust of which neutralizes the pull of its high gravity. Now suppose you weigh a hundred and fifty pounds."

"But I weigh a hundred and eighty-three," objected Strike.

"Okay, okay. Just pretend, hunh? So you'd expect to weigh three seventy-five here. But—" Gerry scribbled.

$$\begin{aligned} \text{weight} &= 150 \text{ pounds} \\ \text{diam. of Triton} &= 3000 \text{ miles} = 1.584 \times 10^7 \text{ ft.} \\ \text{radius of Triton} &= 7.92 \times 10^6 \text{ ft.} \\ \text{gravity} &= 2.5 \text{ g} \\ \text{rotation} &= 45 \text{ minutes.} \end{aligned}$$

$$\begin{aligned} 1 & \\ N &= 0.0222 \text{ rpm} \\ 45 & \\ * \omega &= 2\pi N = 0.00233 \text{ rad/sec} \\ 60 & \\ m &= 150 = w = 4.81 \text{ slugs} \\ g &= 32.2 \end{aligned}$$

"A slug is actually the name of the engineering unit of mass," Gerry interrupted herself to explain—quite unnecessarily as most of the others were well grounded in math.

$$\begin{aligned} \text{Centrifugal Force} &= mr\omega^2 * \\ &= 4.81 (7.92) (2.33)^2 = 207 \text{ lbs.} \\ \text{net weight} &= 2.5(150) - 207 = 375 - 207 = 168 \text{ lbs.} \end{aligned}$$

"So!" Gerry concluded triumphantly. "We weigh only a few more pounds at the equator here than we do on Earth, despite the high gravity. The closer we move to the poles, the more we'll weigh. Of course, I have only a five-inch slide-rule, and the figures may be correct only to two significant figures, but you get the idea."

\* $\omega$  is the omega symbol.

"I guess we get it, all right," Strike muttered, still a bit miffed that Gerry had kept it to herself when they had so desperately needed a ray of hope. "So long as we maintain contact with Triton's surface, we're safe. But the moment we lose contact—uh-uh!"

Intrigued by the thought, Barrows experimented with a little upward jump. He promptly came down with a teeth-rattling jolt. No one ventured to duplicate the demonstration. They were effectively held by unseen chains.

"Say!" Strike had another idea. "Dacres will be dropping in again in a few days to write our farewell message for us. If we can rig up a welcome, maybe there'll be a surprise ending yet to the draymah of 'Gerry and the Pirates'."

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#### CHAPTER IV

##### *A Hairy Intruder*

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TENSED up as they were, having undergone terrible physical stress under fear of impending death, the men needed that feeble joke as an excuse to let down. They roared with laughter, as if it had been brilliantly witty, or even the broadest slapstick gag. They repeated it with variations and comic embroidery till they were emotionally spent, completely relaxed.

Finally, someone made the obvious point that if they were to surprise Dacres on his return, then they must prepare to survive the intervening days.

Sobered, under Strike's leadership, they began to assess their situation.

Outside, the terrain of Triton was bleakly unrelieved in the dim light, seemingly of volcanic origin. There was an occasional tree, squat and massive and spiny. Hoar frost coated the hollows, and a gusty wind whistled thinly.

With quiet efficiency, the men went about their duties, thrusting delicate instruments through the special valves, testing temperature, pressure, analyzing the atmosphere. Strike took one look at the thermometer and shivered.

"I don't believe it," he declared.

"Oxygen out there, all right," Kranz, working with the air sample, announced with satisfaction. "Trace of hydrogen. Trace of water vapor." Then after an interval, "Oh-

oh. Chlorine, too. Not much, though. Be easy to adjust the filters on our pressure suits to take care of it . . . Couple of inert gases, nothing harmful." He looked up.

Gerry and Strike traded glances.

"Good as could be expected," Strike said. "Naturally the gravity would hold a substantial atmospheric envelope. Shall we stroll about the yard and meet the neighbors?"

They drew lots for the six space-suits, and presently the winners poured out upon the surface of Triton like school children at recess. McCray and Kranz promptly staggered tipsily and fell down. Strike and the other men lurched and scrambled and finally remained upright in very weird positions, as if leaning against a gale. They all looked about in amazed bewilderment except Gerry, who was convulsed in unseemly merriment.

Strike inspected the landscape, which was apparently quite flat, then tried to understand why everyone acted as if standing on a hillside. He borrowed an apt phrase from McCray's vocabulary.

"I don't get it," he said.

"Another item I forgot to mention," Gerry explained. "One of Triton's more amusing properties. 'Down' is not perpendicular to the ground, except at the poles and the equator! Evidently, you didn't land quite at the equator, though you came close enough. The phenomenon isn't so noticeable in the lifeboat because it's already lying at an angle. Incidentally, a trip from the poles to the equator would be downhill all the way!"

"Aren't you the cute one, though," Strike growled.

He thought about this strange state of affairs, and had an awful vision of Triton slowly breaking up, with everything rolling down from its two poles till there was nothing left but an equator, spinning solemnly through the heavens like a runaway wheel.

To rid himself of this nightmare, he became very businesslike, dividing the castaways into groups for a general stock-taking. Exploration of the immediate vicinity was not encouraging. There was very little surface moisture, and drilling for water was of course out of the question. A kettle of melted frost, painfully gathered, proved potable, after boiling had driven off the chlorine.

The air was breathable through filter-masks, though cold as a knife-blade in the lungs. McCray, excited as a boy over the new experiences, tried spitting, and was delighted to find the result turned to icicles

before reaching the ground. He abandoned his fun, however, when his lips froze together painfully.

Food, either animal or vegetable, there seemed to be none. This worried Strike.

"There's a lockerful of concentrates," he said, "but they won't last nine of us too long. We can only hope friend Dacres doesn't wait too long before returning to check on us."

His voice trailed off as he saw Gerry staring wide-eyed past him. He turned. Thirty yards away, something new had been added to the landscape—a five-foot high Thing covered completely with dark, coarse hair, tapering to a blunt point from a broad base. It somewhat resembled a blackly furry bishop, strayed from a gigantic chessboard. The Thing stood utterly motionless in the grayness, as they watched. Though apparently without features, it somehow gave the feeling of watching them in intense curiosity.

"Pretend not to look at it," Gerry suggested finally.

At once, the weird-looking intruder glided swiftly forward to within twenty yards, then froze stiffly again in its watchful attitude. McCray's eyes were popping. He hadn't the background to take this experience in stride.

"What is it?" he croaked. "Vegetable or mineral? D'ja see how it sort o' glides along, sneakin' up on us? No feet! How does it work?"

"What a beautiful specimen!" Gerry sighed with professional longing. "I really think it wants to make friends. Doesn't it remind you of an oversize Scotty pup sitting up to beg?"

Strike snorted.

"What an imagination! Looks more to me like—"

"Watch it!" came the sudden warning.

In the discussion, they had taken their eyes from the newcomer, and it had seized the opportunity to move in. The center of its head opened to reveal an enormous mouth, filled with hideous, slavering, black fangs. Emitting an eerie whistling note, the Thing rushed savagely upon the group, in a horridly blind fury.

**E**VERYONE scattered like flushed quail, and the hairy enemy, unable to make quick turns, charged harmlessly through like a bull. Abandoning all pretense, it turned and came sliding back in another silent, deadly rush. Again, the castaways dodged aside.

"He has such an endearing way of showing

his friendliness!" Strike gibed at his fiancée.

But though there were elements of humor in being chased round and round the space-boat, tiring muscles soon warned that the situation was no joke.

"This can't go on indefinitely," Gerry finally gasped. "Someone'll slip, or dodge a little too late. And if we retreat into the ship, it'll just mean a siege. If that blasted Dacres had only left us a weapon—"

She might have been a lady Aladdin, speaking the magic formula, for the life-boat opened and Barrows, grinning uncertainly, tossed an improvised contraption to Strike. It consisted of two scalpels, fastened with wires from the control panel to a three-foot metal piece of weather-stripping ripped from the doorsill, to form a spear.

"Best we could do on short notice," Barrows apologized, then retreated precipitately, as the shaggy, faceless nemesis charged ravenously against the closing porte.

As the Thing reeled back from the shock, Strike deftly moved in with his crude weapon, slashing for the abdomen. The result was so completely devastating that Strike was dumbfounded.

The razor-sharp little knives went in as if through butter, and when they were withdrawn, a torrent of grayish fluid spouted forth almost endlessly, as if the strange creature were filled with the stuff to the exclusion of any kind of organs.

Eventually, the rank flood ceased, and the enemy collapsed like an empty glove, dead. The victory was so absolute—the weird animal had been so utterly ferocious, animated solely by the two emotions of cunning and hate. It had been defeated so easily—that bewilderment took the place of triumph. Everyone gathered round Strike and his trophy.

"Funny stuff," Kranz said, pointing to the great puddle of vital fluid, as yet unaffected by the temperature. "Wonder what it is?"

"Must be anti-freeze," Gerry hazarded.

"Be interesting to examine the beast," Strike said slowly.

He and Kranz exchanged a long look and, by common consent, seized the shrunken carcass and bore it into the lifeboat. They could rig up a rough laboratory there, putter around for hours with the smelly corpse, and be quite happy.

Kranz was a fiend for chemical analysis. He would sample the Styx as Charon rowed him across. Gerry, whose interest in strange

creatures was confined to live ones with commercial value, shrugged it off. It was one of the few times in her life she missed the point.

Seven times, Neptune's pale bulk popped over the horizon to make its swift journey across the sky before Strike, smiling like a cat in a bird-cage, invited Gerry into the lifeboat.

"Interesting beastie," he observed. "Skin as thin as paper, despite the shaggy coat. No circulatory system. Somehow that mess of fluid takes the place of blood—has corpuscles and things in it, too. Rudimentary organs of some kind about where you'd expect to find eyes. In the absence of a Latin scholar, we've named it *Apod Shaggius*—footless and hairy. 'Shaggie' for short."

"That hardly accounts for the self-satisfied smile," Gerry said shrewdly.

Strike grinned wider.

"We analyzed the fluid," he said. "It's a chlorinated compound, as you might expect—basically perchlorethylene."

"And so?"

"Kranz thinks it would be easy to convert the stuff, right inside the creature's body, into hexachlorethane, without any immediate harm. Just a few injections."

"Now there's a brilliant experiment!" Gerry simmered exasperatedly. "And at a time like this, marooned at the outer extremities of the System, our days numbered! Why, for heaven's sake?"

She still did not see the point, nor did any of the others except Kranz, and Strike found perverse delight in that fact. Gerry had kept still about Triton's peculiar balance of centrifugal and gravitational forces while she wasn't sure.

He, too, would have his little mystery till he knew whether his experiment was going to pan out.

The fact was, within a few hours, or days, Dacres would be returning to see if his murder plot had worked, and to set the stage for the rescue parties. The castaways would have one chance—and one only—to fight for their lives. It had to be good. And anything, however unlikely, that might give them an edge was well worth the effort.

"Never mind why," Strike urged. "Just be a good gal and help me out. All we need is one of these Shaggies captured alive to work on. You can do it. There's chloroform in the medical kit, and a rope that'd make a fine lasso. And, anyhow, surely one little

old monster couldn't faze the inimitable Gerry Carlyle!"

Gerry choked back some very unladylike words.

## CHAPTER V

### Knockout

CAME the day when Tommy Strike's stomach had butterflies in it. That was not from hunger, although rations hadn't been generous. It was the sensation that every fighter knows as the ring lights go on, and the house darkens, and he awaits the bell for the first round.

They were all awaiting the bell now, tense and drawn-faced, as they hid in the darkened lifeboat, ready for a bigger, more desperate fight than any their prizefight pal, Kid McCray, had ever engaged in. Days of anxious waiting were over. Miles above the tricky Neptunian satellite, hovered *The Ark*, slowly descending, quartering in geometric pattern, as the detectors sought the smaller craft.

Were they ready for battle? Strike wondered. Some crude knives and knuckle-dusters had been made, and there had been some excitement when they captured one of the weird-looking hairy creatures they called Shaggies. Strike's enthusiasm for the experiment he and Kranz had performed on the beast had waned.

It was admittedly a longshot, though even if it didn't succeed, they would be no worse off than before. What it all boiled down to was an ambush. Dacres and his mob would be expecting to find nine corpses, the result of the murderous gravity. He was due for a shock.

It would be attacking proton-pistol-armed killers almost barehanded, but they had the advantage of stunning surprise. And the captured Shaggie just might help. It had been "doped up," as McCray expressed it, and turned loose when *The Ark* had finally come into sight. Now it stood out there, a blot on the landscape, surely one of Nature's mistakes.

Of course, the creature would inevitably attack any moving thing, including unwary pirates, with vigor. But whether subsequent events would conform with theory, was in the lap of the gods. And to them, Strike, in

the intensity of his desire to rectify what he felt to be his fault, prayed fervently.

At length the time for wondering was over, for Dacres had finally located the wreck and was bringing *The Ark* down in a swift plunge, to hover lightly a few feet above the surface, balloon-like.

"They sure handle it sweet," someone muttered grudgingly.

"They ought to. They've had plenty of time to practise." That was Baumstark.

"S-sh! They might hear us!"

Minutes ticked away, as the gangsters in *The Ark* made their routine tests. Then the ship came to rest, the main porte slid open, and the entire vicious mob stood in the big lock staring eagerly out. All wore gravity clogs.

Strike recognized Dacres at once, taller than the others, and anger began to seethe in his brain like an acid bath, ran like liquor through his veins. He felt his companions stir in the grip of that emotion, as they peered through pin-point peepholes. He could literally smell the hate as it sweated out of their trembling bodies.

"Not yet. Not yet," Strike whispered restrainingly. "Watch."

It was an ancient movie—jerky action, but no accompanying sound. Outside, the Shaggie was going through its familiar routine, sliding closer and closer, as it believed itself unobserved, to the men in the lock entrance, amazingly like an enormous friendly puppy, afraid of a kick, but hoping for a bone.

One of the gangsters, completely taken in, snapped his fingers at the creature invitingly. Then, inevitably following its fixed emotion-habit pattern, the Shaggie plunged viciously into action. Its initial rush carried it right into the air-lock.

A fearful tangle ensued.

**M**OUTHS popped open in soundless cries. Faces grimaced in sudden terror. Dodging madly about, the men fought to retreat into the main corridor of *The Ark*.

The Shaggie's second blind, slavering rush took it right along with them, and someone went down. There was a nasty moment before a proton bolt blasted the Shaggie quite literally to bits, flooding the passageway with its evil-smelling, vital fluid.

"This is it!"

Strike's voice was suddenly sharp and triumphant. A spate of grimly vengeful men, with Kid McCray in the lead, poured from

the lifeboat and ran toward *The Ark*. Finely trained fighting men that they were, they didn't even pause at the astounding sight that met their eyes. From out of *The Ark*'s open porte came billow after billow of dense white smoke. It was as if the entire ship's interior had suddenly begun to burn.

As the crew dashed across the short intervening space—they had left off their pressure suits for sake of freedom of action—Strike breathlessly explained in triumph:

"The smoke's harmless! Don't be afraid! Hexachlorethane in the Shaggie reacts vigorously with metallic zinc in the zincale floor and forms zinc chloride. Reaction liberates such great heat that the zinc chloride is immediately evaporated, and a dense cloud o' white smoke is generated!"

As Strike fought for breath, he saw the man called Monk stagger out of the blinding smoke into view, squarely in the path of the charging McCray. Without even slowing, McCray let drive with a frightful blow, a concentrate of days of fear and hunger and hate.

The blow caught the man squarely in the pit of the stomach, and through a momentary thinning of the smoke, the astonished castaways saw Monk go sailing clear through the air-lock and across the corridor to smash sickeningly against the far wall.

The truth dawned instantly. The piratical gang had adjusted their clogs to handle two-and-a-half Gs. Consequently, they were only flyweights now, not having had time to discover the facts of the gravitational situation.

With a howl of pure joy, Strike plowed after McCray into the wild melee that surged savagely through the white murk, throwing haymakers at everything in reach. If he hit someone who was solid, he muttered apologies and sought a new target. If his victim vanished from sight in the smoke from a single punch, he eagerly followed it up.

The end of the battle was a foregone conclusion. Completely surprised and disorganized, Dacres and his gang were overwhelmed. Only half realizing they were being attacked by men supposedly flat, frozen corpses, and not daring to use their guns for fear of hitting their own comrades, they were scattered, beaten senseless, and disarmed in three incredible minutes of fighting against phantoms.

Only two escaped that first onslaught.

They fled down *The Ark's* endless corridors, firing around corners in a deadly, sniping rear-guard action at their relentless pursuers. Strike, with the aid of captured weapons, quickly laid out a foolproof campaign against the two remaining pirates.

The pirates were driven to the ship's stern by constant threat of being outflanked, as the crew of *The Ark* infiltrated through dark side passages and storerooms. Then, with the arsenal room in his hands, Strike ordered anesthetic bombs broken in the ship's ventilating system. Everyone donned masks. Presently, the two diehards were captured as they slept soundly, faces flushed, in the galley.

The battle was over. Gerry, who had stood apart from actual combat by Strike's insistence, rewarded the valiant victors with a kiss for each.

**T**OMMY STRIKE, during his tumultuous career with his world-famous fianceé, had known some wild celebrations. But he had never witnessed anything like the welcome that awaited them this time.

At a brief stopover on Mars for fresh food, Gerry had broken the whole fantastic story, which had promptly been forwarded by ether-beam to Earth in complete detail—the treacherous attempt of pirates to seize *The Ark* and murder its crew, the marooning, the outwitting of certain death, the strange fight, and finally the return of Gerry Carlyle, bringing the criminals back alive.

For the last leg of Mars-Earth run, they had an escort of police craft, and in mid-space, an armed guard was put aboard. Privately, the crew considered this very unnecessary, but Gerry permitted it only as part of a hard bargain she characteristically drove—an understanding that before Dacres was indicted, she would have first crack at his bank account to pay for the trip to Triton, exactly as contracted for.

And now the home spaceport was in truth a sea of humanity, frothing with white, as thousands of faces turned upward to watch the descent. There were cheers, and speeches, and officials, and photographers, and televnewsasters.

Autograph-hunters broke through the police lines time and again. There was a nasty few minutes as Dacres and his band were hustled through the crowd to the police 'copters. And during it all, Gerry Carlyle and Tommy Strike remained smiling, gra-

cious and friendly. Such marked adulation would have embarrassed any but the most poised.

Finally as the celebrants began to drift away, one of the reporters spotted McCray standing patiently in *The Ark's* air-lock. Instantly, climax piled upon climax, as the man shouted:

"Hey, look! It's Kid McCray! It's the missing Martian middleweight champ!"

Back came the crowds, the cameramen, the broadcasters. The crew of *The Ark* turned to McCray with jaws ludicrously agape. "You mean you really are a boxing champion?" Gerry cried.

McCray grinned self-consciously.

"I tried to tell ya. Nobody wouldn't believe me, that's all."

"Well, I'll be—!" Gerry swore a ladylike oath, to the broadcasters' confusion, and the delight of everyone else.

Then a hundred questions showered on the little group, and bit by bit the amazing story behind McCray's presence on *The Ark* came out.

Darkness was approaching when the spectators, surfeited with the excitement and surprises of the afternoon, at last gave the weary wanderers rest.

Comparatively alone at last, *The Ark's* crew grinned feebly at one another. Tommy Strike had been very thoughtful since McCray's identity was established. Now he tried to move unobtrusively away. Too late. The erstwhile, pushed-around menial placed a firm hand on the captain's arm.

"Uh, look, Mr. Strike. There's sump'in I just gotta do. I only dropped the duke a few times in my life, an' every time I come back to reverse the decision. Even with Dacres an' Monk, I squared things. So you're the only fellow in the world to stop me—remember that first day in the pilot room?—who I ain't got even with. Doncha see? I'm the champ. I just have to reverse that decision." His eyes pleaded for understanding.

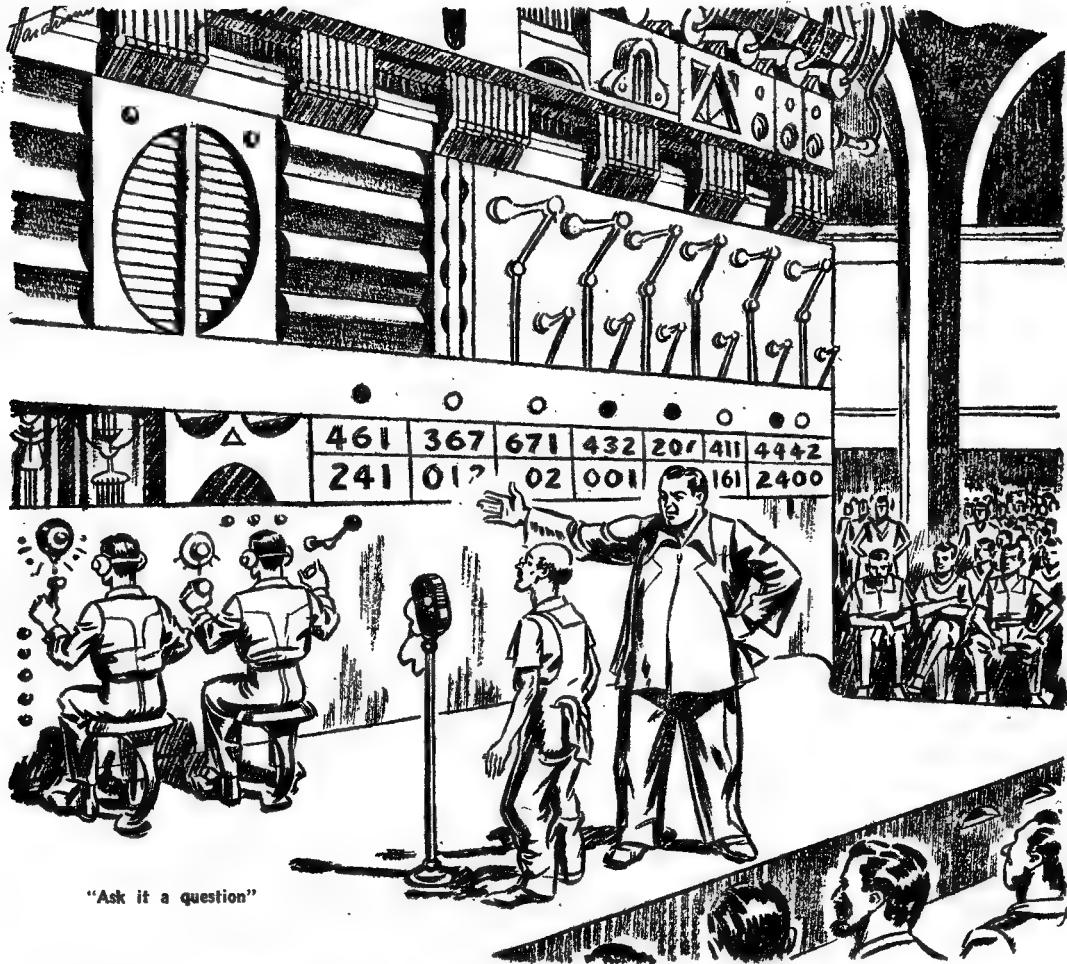
Strike nodded resignedly.

"Matter of principle, I suppose?"

"Sure." McCray nodded eagerly. "It won't take long. Just one knockdown, strictly friendly. You won't hardly feel it, Mr. Strike."

"Okay." Strike's fists came up, and they squared off.

McCray bobbed and weaved, bored in after  
(Concluded on page 82)



# INFORMATION PLEASE

By **STANLEY WHITESIDE**

Who in the world could ever have imagined a mechanical super-brain might be the possessor of a one-track mind!

THIS is the story of how Joe Squeeb lost his job and got a better one, all because he threw a monkey wrench into the greatest scientific marvel of the twenty-first century. I know the story because I used to break news on the teletype for the B. J. News Agency.

The B. J. News Agency has no ear for euphony, however, so I had to leave them and I'm writing these memoirs while I wait for old B. J. to apologize.

The first release that touched on Joe

Squeeb's case was ticked off by me on the master sender. I still got a copy, as follows:  
SASSOON SEIZES SOLVER. PROFESSOR CONNOR CLAIMS IN COURT THAT CONFISCATION OF BRAIN MACHINE IS ILLEGAL.

I remember I paused a couple of minutes for dramatic effect before I sent out the rest of it:

SCIENTIFIC CIRCLES SEEK SOLACE IN SAFE SILENCE. ODDS 10 TO 1 ON SASSOON. AP.

The AP stands for me, Alfred Pennyfeather, and the B. J. News Agency always quotes odds for its customers so they'll know how to write up the stuff in their papers.

A little while after I sent out the release, old B. J. himself prodded me in the ribs. B. J. is a beetle browed person with 'gruff voice and a red face which can wear a very unpleasant expression. Also he has pale blue eyes like chilled marbles.

"Pennyfeather," he says, "cut the comic headlines. Let our customers think up their own. You just give 'em the story."

"Yessir," I agree. But I don't like that crack about comic headlines.

"And get some dope on the Solver," he growls as he stamps out. "Make it brief."

**W**ELL, our files had plenty on the Solver, since it was a hot news item. They claimed it could answer anything. It was a machine that covered an acre of floor and stood about thirty feet high—all full of wires and relays and counters. Also there were tanks of stuff that the inventor called the bio-chemical conceptors. These tanks were hooked up with a million fine wires, from one tank to the next, and all tied in with electronic tubes. It was a sort of super-brain.

The Solver was invented because the human brain is limited to a few concepts at one time. Science needed a brain that could juggle a whole bunch of ideas simultaneously. And since the Solver was fed only facts, its multi-brain wasn't cluttered with useless junk.

It had taken months to build it—and a lot of dough. So the scientists weren't anxious to have it snatched from them by any politician like Sassoon.

I called up Professor Connor, the inventor, and told him who I was.

"I have no comments for the press!" he says tartly. In the visiplate, his beard was thrust forward so pugnaciously that it was all out of focus and I had to peer through the brush in order to see his face.

"Take it easy, Professor." I smiled suavely. "The Press is your best friend. If you're getting a dirty deal we will tell the whole world about it! Are you going to appeal the court decision?"

"Yes," he says after a pause. "I am!" He strokes his beard so that it clears from the visiplate and I can see a fairly benign looking old geezer. "I was only defeated on a technicality today. As inventor and owner of the Solver, my rights are patent."

"How come Sassoon grabbed your gadget, Professor?"

"The Solver is not a gadget!" he snaps. "It's a delicate machine—and dangerous! The man who controls it can solve any riddle,

given time. Therefore, it should remain under scientific control. It belongs rightfully to the Science Department."

"Yeah—but how about Sassoon?"

The professor's snort rattled the receiver.

"Sassoon is already head of Geo-politics. The other departments of government won't last long if Geo-politics controls the Solver. Sassoon is an unscrupulous bandit!" And the professor snapped off his set.

Maybe he was right. In the news room it was no secret that Sassoon was going to be the Big Shot or bust. In fact, I had a dilly of a headline all cooked up for the day Sassoon seized the scepter.

The following morning, however, the news wasn't so funny. Professor Connor was going to see his lawyer that day. Here's the teletype copy:

PROFESSOR CONNOR KILLED IN CRASH. CAR COLLIDES WITH CAB AT CORNER OF 5TH AND GRAND. CONNOR'S CORPSE CONSIGNDED TO CREMATORIY. ODDS 50 TO 1 ON SASSOON. AP.

Old B. J. raised holy cain over that one!

"Connor's corpse consigned to crematory!" he yowled. "One more crack like that and you, Pennyweight, are fired!"

"Pennyfeather," I correct B. J.

"Featherweight, Pennyweather, Periwinkle!" he foams. "What's the odds! You Featherbrain!"

Before I can answer, he's gone, slamming the door and blowing papers off my desk.

Well, a couple of days later Sassoon announces that the Solver will be unveiled to the public with due ceremony, come Wednesday. The Science Department is invited to attend at the Solver Building. Which is very magnanimous, considering that the Science Department paid for the building and the Solver too!

"Jellyfeather," says old B. J. "You go down and cover this unveiling."

That's how I came to witness the Joe Squeeb incident.

I had a seat in the hall right down in front—just behind the disgruntled looking scientists. Maybe they had a right to feel that way, but they knew better than to ignore Sassoon's invitation. Sassoon was very sensitive about such things as being snubbed. So they were all there, sitting like a row of hungry blackbirds.

Up on the platform, the chairman opened the proceedings with a nice little speech which safely said nothing, and then he handed over the meeting to Sassoon.

Sassoon was a big, fat man with slick black hair and eyes that reminded me of old B. J.'s. Fishy. Sassoon, however, put on the jolly act—big smile and breezy manner, the "we're-all-one-big-family" touch.

Most of the people fell for it, and gave him

a laugh when he sprung his warming-up joke. But the boys with the brains in front of me just gloomed. I saw Sassoon give them a quick once-over before he went on to describe the wonders of the Solver. He gave a pretty good speech, too, if you didn't know what was behind it.

"Mankind," he finally ended, "will look back on this day as on the dawn of a new era. Posterity will bathe in the flow of a new wisdom that has come from our hands!"

Then he pulled a cord that opened a huge curtain behind him, and the Solver was unveiled. Appropriate oh's and ah's followed. It did look impressive at that. Like a gigantic calculating machine.

**I**N FRONT of it there was a wide platform with several desks. These were occupied by attendants ready to feed data which the Solver might require. Each desk had a microphone for that purpose, and there was one gilded microphone near Sassoon. This one was for stating the question. A large loudspeaker was suspended high up to deliver the Solver's answers.

I once read that the ancient Greeks had a similar setup, called the Delphic Oracle. Only some fellow got the wrong answer once and blew the whole works some way.

"And now," Sassoon beamed on his audience, "we will demonstrate the Solver in action. Perhaps we should allow our scientific friends the honor of asking it the first riddle. After all, we owe science a great deal, ha-ha!"

But none of the savants made a move. Maybe they felt balky. However, Sassoon was too smart to allow any awkward pauses.

"But then, perhaps the honor should go to some less illustrious person." His cold eyes had spotted the figure of a little man in overalls, standing in a half-open doorway. The little man leaned on a broom. I found out later he was Joe Squeeb, the janitor of Solver Hall.

"Since we must always remember our democratic traditions," Sassoon's voice was slick as warm margarine, "I think our humblest worker should have the great honor of asking the Solver its first public question. Come here—you!"

The janitor dropped his broom and turned to flee, but Sassoon's voice, with just a slight grating to it, pinned him in his tracks like a mesmerized rabbit.

"Come, come. You, with the broom. Step up here!"

Joe Squeeb moved as if pulled by invisible chains. On the stage with Sassoon, he blinked nervously at the audience. Then he suddenly grinned, showing snaggy teeth, like a man who feels he's a goner. Sassoon towered over him as they talked together for a

moment before Sassoon turned to face the audience again.

"This, ah, gentleman, is Joe Squeeb, our janitor. He has agreed to try and stump the Solver, ha-ha!"

Sassoon's great hand smacked Squeeb on the back and nearly sent the little man sprawling into the row of stony faced scientists.

"And now, Mr. Squeeb—ask your question." Sassoon pushed him to the gilded microphone.

Squeeb's Adam's apple bobbed. He shuffled his feet and twisted his scrawny neck. I heard his panicky whisper to Sassoon.

"What'll I ask it?"

"Come, come!" Sassoon frowned heavily. "Don't jump around like that! Ask it some question in arithmetic. Or maybe you know all the answers, ho-ho!"

Squeeb rolled his eyes. I guess he wasn't used to thinking because he acted as if he was in pain. Then, suddenly, his face lighted up.

"I got it," he said triumphantly. "I remember a problem that stuck all of us."

Evidently he had dredged the depths of his mind for some long forgotten problem of high school days.

"All right." Sassoon switched on the control. "Ask it, man, and get it over!"

Squeeb gulped, gave his waiting audience a last hopeless grin, and cleared his throat.

"Exactly what is the area of a circle," he asked brightly, "with a radius of one inch?"

Bertrand, the great mathematician, sitting just in front of me, gave a sort of gasp. Then the raspy notes of the Solver squawked a reply.

"The area of a circle with a radius of one inch is exactly—Three point one, four, one, five—nine—two—six—"

Bertrand, the mathematician, had a notebook and pen out, scribbling as the Solver announced the figures in a plodding monotone. He covered one line and started on the next.

The audience began to stir impatiently. This was not very entertaining. Sassoon frowned, quickly smiled again.

"How long does this go on?" he asked jocularly.

One of the desk attendants moved forward.

"It'll be quite a long time," he said. "The answer has never been completed."

"Oh—six— —nine— —five," the Solver intoned persistently.

"Switch the blasted thing off!" Sassoon ordered irritably.

The Solver gurgled to silence.

"Now." Sassoon cleared his throat. "We will ask it another question."

The same attendant coughed discreetly.

"Just a minute, Mr. Sassoon," he said apolo-

ogically as the boss of Geo-politics swung around to face him. "The Solver is not purely mechanical, you know. The actual work is done by the bio-chemical cells and these cannot be reset to zero without discharging their concept energy."

"Huh?" Sassoon frowned at the interruption. "Well, discharge 'em!"

"That's the trouble, sir. A Solver cell is like a human brain cell, it must complete its function in order to relapse into inactivity. Shutting off the Solver merely holds its processes in abeyance. When we switch on the power again, the cells will continue where they left off till their task is completed."

**S**ASSOON thought that one over.

"Then switch it back on again. Let's get this over," he snapped, and turned to look for Joe Squeeb. But the janitor had discreetly faded. His broom leaned deserted, in the doorway. Squeeb wasn't so dumb as he looked!

"Nine—Six—Four—" The Solver was slowing down a little as the calculations became more involved with unwieldy quotients. But there was grim resolve in the metallic tone.

I tapped Bertrand on the shoulder.

"How long will this take?" I asked.

"Couldn't say." He smiled thinly. "We once wore out several machines on that problem. Imagine a Joe Squeeb saving us from—" He stopped abruptly.

"Can't you tell the Solver some way that the present answer is close enough?"

Bertrand shook his head.

"As you may recall, Joe Squeeb definitely asked for an exact answer. The Solver will give it—regardless!"

"Eight—one—two—" The Solver was beginning to sound labored. Inside the great machine relays were madly racing.

"I guess Joe Squeeb just lost a job," I murmured.

"He has another job waiting for him." Bertrand almost grinned. "We need someone to dust our equipment—someone who knows enough not to monkey with things. It'll really be a pension job."

I looked at Sassoon. He appeared very unhappy. Not only had he made a chump of himself, but it looked as if he'd spiked his own guns by gumming up the Solver. He couldn't use the machine for his own ends and he'd have no excuse for stealing the next one to be built.

When I left Solver Hall the machine was gurgling a number about every twenty seconds and slowing down all the time. Sassoon had asked Bertrand to get busy and shut it up some way, and Bertrand was gently explaining to him that it was merely a matter of time—lots of time—before the Solver would stop. Unless Sassoon wanted it torn apart.

I sent out a teletype release to the waiting world. It read:

**SASSOON SUMMONS SCIENTISTS FOR SOLUTION AS SOLVER STRANGLES ON SQUARING OF CIRCLE. SASSOON SWEARS TO SILENCE SOLVER. ODDS 1,000,000 TO 1 ON SOLVER. AP.**

Ten seconds after the release, old B. J. was at my desk. Red eyed!

"Pinfeather," he roars, "you're fired!"

"It's Pennyfeather," I retort. "And I quit two seconds before you spoke!"

"All right, all right! Bunnyweather, then!" He clutches the edge of my desk. "Only get out of my sight! Quick!"

And that is Joe Squeeb's story. Right now he's working for swell wages at Science Hall. They all call him Joe and ask him all the time how is his family and how is his arthritis. He's even putting on a little weight.

As for old B. J.—I figure he'll come around to me, apologizing, some day. Unless apoplexy gets him first. I'm just waiting while I write these memoirs.

## SIREN SATELLITE

(Concluded from page 78)

the retreating Strike—and suddenly the pugilist's feet slid into a weird tangle and he sat down hard. He leaned forward to clutch his ankle and howled in anguish.

Strike, who hadn't landed a blow, and the amazed spectators gathered around. McCray's ankle was visibly swelling—a bad sprain. The bout was over. "What on earth happened?" Strike inquired.

McCray gave up groaning a moment, pointed to the moist, bruised peel of a Martian banana, then looked around accusingly

for a culprit to blame. His glance stopped on Gerry Carlyle, whose cheeks were bulging as she chewed heroically. She gulped it down.

Breathless, she raised her fiancé's arm.

"The winnah," she cried, "and still champion—Tommy Strike!"

Hand in hand, they ran laughing away into the darkness, while Kid McCray beat the tarmac in futile exasperation.

"Aw, wait a minute," he wailed. "You just can't do this to me!"



Sheldon grabbed the projector, swung it fiercely toward the skull of the nearest brute

# ATOMIC STATION

By FRANK BELKNAP LONG

When the energy of Earth's experimental station in space runs amuck, scientist Roger Sheldon puts up a big battle!

IT WAS incredible and a little frightening. The rocket ship was within a half million miles of the Station, but as yet no reply had come to the frantic signals which Roger Sheldon had been sending out at ten second intervals.

He sat before the observation glass in the control room, a big man with the competent hands of an experienced navigator, and a curious mobility of expression which seemed out of keeping with the precise movements

which those hands were making on the board.

His face was that of a man who had gazed on great unfathomable star fields smouldering in the depths of space and then—had deliberately curbed his exaltation and turned back to concern himself with the little affairs of Earth.

In three months and two days Roger Sheldon had passed completely beyond the Sun's gravitational tug into the utter darkness, the chill bleak immensity of interstellar space.

To have accomplished more he would have bartered all the years of his youth. He had hardly dared hope to accomplish as much.

Now he was returning to the Station with his thoughts in a turmoil. His nerves were so taut he was afraid to relax even for the brief instant it would have taken him to shake a few grains of amytal into his palm and inhale the fumes.

For two generations the Station had encircled the Earth, an outpost of security bright with promise, the concrete embodiment of humanity's determination not to destroy itself.

While atomic research had remained in the uranium fission stage, the vast laboratory facilities of Earth had not endangered humanity. Even the first atomic bombs had not placed an intolerable strain on man's capacity to survive the hazards of working together toward a shared goal.

But the tremendous series of explosions which had rocked the Earth on June sixteenth, in 1969, had convinced even men of good will that a controlled, disciplined release of the mighty forces locked up within the atom could no longer take place on Earth.

It could only be allowed in an orbit far enough removed from Earth to jeopardize only the Station itself and the lives of a few men. Carefully integrated psychometric tests had shown that not more than a dozen men could coordinate their efforts under the constant threat of annihilation without developing personality quirks as dangerous as trigger neutrons would have been in the days of the New Mexico experiment.

Seventy million miles from the Earth the Station moved through the interplanetary night, a mile-long floating laboratory. This laboratory was equipped with every safety device known to modern science for the control of energies powerful enough to disrupt every vestige of matter within a half million miles of its orbit.

**I**N 2022 a dozen men could have destroyed the Earth. Instead, on that little self-contained macrocosm, containing accommodations for fewer than a hundred men, women and children, the first interstellar ship had been constructed and powered with undreamed of energies.

To that little macrocosm the ship was now returning, piloted by one of those twelve men.

Sheldon would have thrown back his head

and laughed long and heartily if someone had suggested that power could go to the head of a man like John Gale. Nominally Gale, a great bundle of immense kindness, as selfless as a carven Buddha, was in command of the Station. But it was of no great consequence who was in command, because those men really could be trusted.

Sheldon stiffened abruptly. His eyes shifted from the control board to the observation glass. Unmistakably the gravity scanners had picked up a moving object in the darkness ahead, and were transmitting it to the glass, line by hazy line until a filmy opacity was hovering in the precise middle of the instrument.

Sheldon recognized the Station from the peculiar flatness of its contours. At a quarter million miles it showed up as a misty ovoid, flattened at both ends and faintly rimmed with light. By pressing hard with its thumb on both sides of a clay egg a child could have produced a fair facsimile of the Station as it appeared in the glass, except that the image was in rapid motion.

At a hundred million miles Sheldon cut all but two of the stern jets, and prepared to bring the ship in. His face was haggard with strain. He had given up trying to contact Gale. He'd know in a moment, he told himself grimly, why his signals had been ignored. Until he did know it was useless to speculate about the reason, or reasons, for Gale's silence.

The ship made a perfect nine-point landing, almost drifting in over the uppermost of the two sectional metal platforms which jutted out from the Station's central section like the wings of a colossal, space-spawned bat.

Five minutes later Sheldon was emerging from the gravity lock into a glow which lighted the darkness about him in all directions. Beyond the glow immense shadows crouched. When he raised his eyes he could see the stars, clusters of them winking just beyond the rim of the great bulk of floating metal from which he'd taken off six months previously.

His features were almost unbelievably haggard now, and he felt as though he'd left a part of himself in the vast reaches of utter darkness which lay between the stars.

He had left the shadow cast by the ship and was moving toward the edge of the platform when he heard a voice.

"Stop!" it yelled. "Who you?"

Startled, Sheldon swung about. As he did so a gaunt, massive-browed figure detached itself slowly from the shadows and came shambling toward him.

For an instant Sheldon stared in utter disbelief, a coldness encircling his scalp. The figure was that of a seven foot giant, with bulging biceps and a tangle of coarse black hair on his chest. His features were repulsively apelike. His apparel consisted solely of a soiled and tattered waist-cloth which encircled his hips, and clung loosely to his hairy thighs.

As Sheldon returned the brutish creature's stare he perceived with sudden horror that he wasn't clasping a modern weapon of science but an enormous wooden hatchet which gleamed dully in the steady glow.

Even the blade of the weapon was made of wood, but so sharply edged was it that Sheldon was under no illusion as to what would happen if he gave the giant an excuse to send it crashing against his skull.

"Where's Gale?" he demanded, realizing the futility of the question even as he asked it. "I've got to talk to him. You hear? Gale!"

Sheldon wasn't prepared for the convulsive hate which flared in the giant's stare the instant he recognized the elderly scientist's name. That the savage creature did recognize Gale's name was startlingly evident, for he repeated it slowly, his lips writhing back from his teeth.

"Gale!" he snarled. "Him very old. Many years dead."

It seemed to Sheldon that an abyss had opened up beneath him, filled with a blackness so bottomless that he was powerless to adjust himself to it. He stood staring at the giant in stunned disbelief, his face a bloodless mask.

With terrifying suddenness the giant's immense hairy hand shot out to fasten on Sheldon's shoulders.

"You come to find Gale?" he snarled.

Sheldon struggled then. Foolishly he tried to free himself, clasping the giant's wrist, and tugging at it with all his strength. With a desperation born of terror he even tried to wrench the hatchet from the savage creature's clasp.

He succeeded only in further enraging the brute. Shaking his arm free, the giant snarled savagely, raised the hatchet, and brought it down on Sheldon's skull.

Just how violently Sheldon was not to know, for the instant the blade struck him a

terrible, light-lanced blackness exploded inside his head. With a groan he sank down, rolled over, and lay still.

**H**E DID not see the giant raise his arms skyward, grimace hideously, and dance wildly up and down beneath the pale stars. Faster and faster, his body bending sharply as convulsive tremors shook him. Shrieking, whirling, bending and straightening, the hatchet in his clasp gleaming redly in the steady light as he danced.

Sheldon's head was aching when he sat up. Instinctively he pressed his hand to his temple and withdrew it with a groan of pain.

Curiously, consciousness hadn't returned slowly, leaving him confused. It had returned swiftly. He knew that there was a deep gash in his forehead and that he was fortunate to be alive.

Painstakingly he explored the gash again. It was still bleeding a little, but he was quite sure that the ax hadn't penetrated his skull. His vision was much too clear, his faculties too abnormally alert.

He could make out every detail of the small, metal-walled room into which he'd been carried by his brutish assailant.

Carried or dragged. He had no way of knowing. He only knew that he was now sitting up with his back to a firm metal wall, staring straight across the room at a low metal bench.

On the bench sat a dozen rosy-cheeked, almost doll-like little figures clothed in fantastically bright garments that seemed to be made of tissue paper.

The little figures had the pudgy hands and dimpled legs of very young infants, and they were staring at him out of wide dark eyes that stubbornly refused to blink.

It all seemed like a dream. But Sheldon knew that it wasn't. He even knew that the little figures were not infants. They were more like Lilliputians, except that Lilliputians could blink.

Was that because they lacked power to move, he wondered wildly. If only they would walk, shift their positions a little or cease to regard him with that fixed, unwavering stare.

Suddenly the door opened, and a girl came into the room. A full-bosomed, strikingly pretty girl, wearing a plain white smock which descended from her shoulders to just above her knees.

A girl with raven-black hair and lustrous

dark eyes, a perfectly normal girl carrying a cracked earthenware bowl.

Seemingly the bowl contained milk, for the instant the girl saw Sheldon her pupils dilated, and it fell from her hands, splintering into fragments and spilling a thin white fluid which snaked in all directions over the floor.

The next instant she was on her knees before him, staring at him out of wide eyes, running her hands over his face and almost fearfully patting his hair. For a moment she continued to explore the contours of his face, as though amazed that his features were not coarse and thick like the features of the brute who had struck him down.

Then astonishment and a fierce, almost maternal solicitude filled her eyes.

"You're hurt!" she murmured. "Here! Let me bind up your head."

Sheldon had started to get up. But before he could regain his feet, she'd ripped a strip of cloth from her smock, and was winding it about his head. Her breath fell warm against his face. He sank back against the wall, and let her have her way. Deftly she knotted the bandage, and adjusted it so that it rested comfortably upon his head.

"A man like myself!" she murmured, incredulously.

Sheldon stared at her, a tightness in his throat.

Yes, there—there was a resemblance. Faint, but unmistakable. Not to himself, but to Gale. She had Gale's almost incredible width of forehead—a feature which, oddly enough, did not detract from her loveliness. And when she smiled something about her mouth reminded him of Gale.

She was smiling now, nodding and smiling at him, her eyes strangely moist.

"I've seen pictures of men like you in the micro-audiovisual films," she said.

Then as she raised her head Sheldon saw that she had Gale's eyes.

"Where's John Gale?" Sheldon said, quickly. As he spoke he leaned forward, and gripped the girl's wrist. "Where is he?"

For a moment the girl's eyes grew so large they seemed to fill her face.

"Truly, you do not know?"

"I only know that he isn't here to welcome me," Sheldon said, moistening his dry lips. "Instead, I received a very surprising kind of welcome just now. Where is Gale?"

"My great grandfather has been dead for seventy years," the girl said, as though she were addressing a very strange sort of child.

"If you are from Earth you would not know, perhaps. No one has come to the Station since grandfather died." Her eyes clouded. "Why, I do not know. There is so much that I would like to know, that I cannot hope to know."

"What—what year is this?" Sheldon asked, running a hand over his bandaged forehead.

THE girl shook her head. "I can't tell you that. We have lost track of the years. Since Gale died there have been fewer and fewer of us. Mother was like me, and the man to whom she was wed. But they are not alive now. I am the last."

She turned abruptly and pointed to the immobile, staring little figures on the bench, "These are my aunt's children."

Sheldon felt a coldness start up his spine. "Children!" he cried, in horror.

"They are human mutants," the girl said, simply. "Zombie mutants, the micro-films call them. They can obey when spoken to, but they cannot speak or act of their own free will. But the pituitary mutants are far more primitive, really. Giganticism. Atavistic giganticism. It's all very clearly explained in the microfilms. Pituitary giants they are, with the physical characteristics of primitives. Dawn men."

Sheldon rubbed his burning brow.

"If I had returned a hundred years in the future what you say would not have seemed incredible," he muttered, dazedly. "The radiations produced by atomic fission on an almost undreamed of scale might alter human genes, yes. Alter the microscopic carriers of human inheritance, stunting the body's growth or reversing the course of human evolution."

"Yes, yes," the girl said. "That is exactly what happened. I have what mother called the equivalent of a modern scientific education. That's why I understand so much, and so little. There are gaps. Gale destroyed many of the films. There were things he did not want even my mother's mother to know."

"We were releasing energies up and down the scale of matter," Sheldon said, slowly. "Disrupting every known element and its isotope. Controlling the chain reactions, of course, using every safeguard. But the radiations which escaped might well have given rise to mutations on the biological scale."

He turned and glanced at the little figures on the bench.

"Infantile type with schizophrenic men-

talities." Sheldon drew a quick breath. "Or primitive types with thick, coarse features. The mechanism of evolutionary retrogression lies dormant in all of us. A disease like acromegaly will touch it off, causing man to regress to the brute. An alteration in human genes before birth might very well result in a more deep-seated primitiveness. Acromegaliacs only regress physically."

A faint smile hovered for an instant on the girl's pale lips.

"You're talking like a micro-film lecturer," she said. "You have the scientific temperament, that's plain."

"Yes," Sheldon said. "Yes, I have. If the world fell on me, I'd want to know how it happened. I'd stop and talk about it."

"I'm like that too, a little," the girl said.

A sadness crept into her gaze. "I do not fear them," she said. "I have only compassion for them. I nurse them when they are ill, just as I feed these helpless little ones. And in so far as they are capable of affection, they have for me a certain tenderness."

She started and drew back, as though frightened by the look which had come into Sheldon's face.

"If I had returned a century from now I might have believed you," he said. "But I left the station exactly six months ago."

"You left the Station?" The girl stared at him. "What is your name?"

"Roger Sheldon."

"You made the first attempt ever made by man to conquer the utter black night of space!" The girl's eyes had begun to shine. "Yes, yes. There are micro-film recordings of your ship taking off. Long, long ago, in the dawn. Gale—Gale left a message for you. It was his wish that it be given to you on your return, if you ever did return. I have it safely locked away. Mother made me promise I would not break the seal."

Her hands were suddenly warm about his, tightening, drawing him toward the door.

"Oh, it's unbelievable! I'm glad now I didn't project the recording. I was tempted to. It was a torture not to. But somehow I could not. I'm funny that way."

Funny that way! It was the first time the girl had used a colloquial expression. Oddly enough, it made her seem more akin, in some strange way closer to him.

"I'll take you to the micro-film library," she whispered. "But we must be careful. The shaggy ones will be watching us. They are creatures of impulse, dangerous when

provoked. You must have done something to antagonize them."

"I only saw one," Sheldon said. "He struck me down when I demanded that he take me to Gale."

**S**LOWLY the girl paled. "That was the most dangerous thing you could have said. Just before he died Gale had to adopt stern measures. The shaggy ones—we have always called them that—were getting out of control. To them he is a terrifying, half-mythical symbol of wrath.

"You must believe me," she pleaded, as though aware of his thoughts. "They have developed a peculiar tribal organization of their own. They're like the savage tribes of Earth I've seen in the micro-films. Wouldn't you regard them as dangerous?"

"Dangerous, yes," Sheldon said, slowly. "I wonder why he didn't kill me. Why did he bring me here?"

"He did not want you to die," the girl said. "I told you they were like savage children. A child may strike another child in a fit of rage and not want him to die. When the shaggy ones are sick or injured they come here, and I bind up their wounds, when their wounds are not too grievous. To them this room is a place of healing."

"Then I was brought here to be healed."

"Yes." She was by the door now, pulling it open. "Follow me," she pleaded. "Keep close to me, and if you see one of the shaggy ones try not to look startled. It's best to ignore them. By now they're probably swarming all over your ship, and wondering about you."

"I don't doubt that," Sheldon muttered, but made no protest.

The room opened on a narrow corridor suffused with cold light. It seemed vaguely familiar. Suddenly Sheldon realized that he was close to the three large rooms which Gale had occupied six months previously.

Six months or a century? Could a man lose track of time in the gulfs between the stars? Could time sweep past, in some strange fashion leaving him utterly untouched?

"Hurry," the girl whispered. "Keep close to me. They won't harm you if we move like twin shadows in some secret dream!"

Sheldon turned and stared at her, amazed by the startlingly poetic quality of her speech. Amazed as well by something warm and shining that had crept into her glance.

Almost it seemed as though a rose had unfolded in his clasp and was filling the corridor with its fragrance.

A moment later they had passed the photo-electric heat cone which guarded Gale's quarters, and were standing at a turn in the corridor.

"Straight ahead," the girl said. "The library's at the end of the corridor."

"I—I thought it was on the level above," Sheldon muttered, dazedly.

The girl shook her head. "Gale may have moved it. I do not know. Many of the rooms have been moved since mother was a little girl. But I do not remember about the library."

Withdrawing his gaze from the massive door which loomed behind the heat cone Sheldon turned, and followed her down a narrower corridor to where another cone loomed in shadows.

To his dismay his companion walked straight toward the cone without stopping to cut the beam.

"Look out!" he warned. "You'll be seared."

The girl swung about, her eyes widening in puzzlement. "What do you mean?" she asked.

"The photo-electric circuit which activates the cone!" Sheldon's voice was choked. "You started to walk right through it."

"Well?"

"You'll be seared to a crisp unless you cut that circuit with a combination disk. Haven't you got one?"

For answer the girl turned and advanced toward the door with her shoulders squared.

She was within a foot of the beam when Sheldon leapt toward her, swung her about and dragged her forcibly backwards.

The next moment her lips were glued to his, her arms having gone up to encircle his shoulders. It was a miracle so unexpected that for an instant he stood as though frozen.

Then he was holding her tightly and smoothing her hair as he returned her caresses in full measure, a man fiercely, crazily, primitively in love with a girl whose name he did not even know.

When he released her her eyes were shining.

"It happened quickly, didn't it?" she said. "The micro-films show scenes of courtship ridiculously drawn out. As though a man needed time to wonder about a woman and a woman still more time to wonder about a man."

"It happened quickly because you were walking straight to your death," Sheldon said, his eyes wide with doubt. "Did you do that deliberately?"

The girl flushed.

"I wasn't in any danger," she said. "There's no circuit now, no need for a circuit. The Shaggy Ones shun the library because the projection screen terrifies them. To them it is an instrument of sorcery which seeks out the dead and brings them back to life."

"Yes?" Sheldon said, looking at her. "Tell me, what is your name?"

"Anne," the girl said, simply. "Do you like it?"

"There's nothing wrong with it," Sheldon said.

**A**NNE'S face became suddenly grave. "My name isn't nearly as important as Gale's message," she said. "Come."

The library exuded a faint mustiness. There were cobwebs around the ceiling. Shadows seemed to follow them as they crossed to the micro-film cabinets which filled every inch of wall space on three sides of the room. On the fourth side a six foot screen, surmounted by a cold light bulb, faced a micro-film projector on a circular metal stand.

In utter silence Anne removed a small gleaming key from her smock, and unlocked one of the cabinets. Sheldon watched her, a breathless expectancy surging up through him.

Perspiration was beading his forehead when she turned abruptly and handed him a tiny sealed roll of micro-film.

"Break the seal and thread the film into the projector," she urged. "Hurry!"

Sheldon looked at her. "Is this Gale's message?"

Anne nodded. "Yes. Oh, make haste. They shun the library, but your presence here may serve to arouse their curiosity. It may even do more."

Sheldon nodded grimly, and moved toward the projector. His hands shook as he broke the seal and threaded the serrated end of the film into the instrument. A moment later he was standing with his arm about the girl's shoulder, staring at the screen. His brain felt strangely cold, as though icy currents were swirling around and around inside his head.

For an instant there was only a dull flickering. Then a bright, steady glow filled the

screen, and Gale's face came sharply into view.

Sheldon ceased to breathe.

The Gale who looked out at him from the glow was a much older Gale than he had known. Older, and shockingly changed, for his face was haggard with torment, his eyes so deeply sunken they seemed more like holes in a skull than the eyes of a living man whose thoughts had once moved in an orbit of immense kindliness and calm grandeur.

Suddenly he was speaking.

"I knew you'd come back, Roger. Not even the variable nature of time can prevent my saying to you: I knew you'd come back!"

The tight lips relaxed a little and a smile spread over the tired old face. "Remarkable, isn't it? I'm gone, but we're really meeting again, lad. Just as surely as though I were standing here talking to you in the flesh."

Gale's face grew suddenly grave again. "I wanted to tell you, Roger. Believe me, I did. But the others wouldn't have it. It's no light matter to deprive a man of his world by exposing him to a time lag of well over a century."

Sheldon cried out.

"We decided not to tell you the six months you'd be gone would be a hundred and ten years here. Thought you might not be able to endure the thought of not aging at all while we aged normally in normal space. So we didn't tell you just how accurately we'd measured the lag by checking your initial velocity against the limiting velocity of light. Harsley and Wells did the checking, lad. Their computations would be incomprehensible to you, but Harsley, as you know, is not in the habit of making mistakes when he's working with a Tov-calculator. Wells would have caught him up if he had."

For an instant Gale paused to smile briefly. There seemed to be small explosions in his sunken eyes as he continued.

"You'll be traveling through a complete arc on the Lorentz scale—an arc which will carry you into non-Euclidean space. You'll return a century from now, Roger. You'll pass through a segment of the continuum looped back on itself—a very small temporal-spatial warp as warps go, but large enough to lop off a hundred and ten years in our space."

For an instant there was a roaring in Sheldon's ears. A dizziness swept over him, blurring his faculties and causing the image on the screen to waver and recede. For an

instant he heard only an unintelligible jumble of syllables, saw only a vague splotch of light where Gale's face had been. Then his vision grew sharp again, and Gale's words came clearly.

"The earliest atomic experiments did not alter human genes as far as we could determine. Certainly uranium fission didn't, but—as you know, Roger, we were releasing energies up and down the scale of matter."

"That's what you said!" Anne cried. "He's repeating your very words, Roger."

Sheldon had stiffened, but at the sound of the girl's voice a little of the tenseness went out of his features. He nodded and tightened his hold on her shoulder.

"The first mutant was born five years after you left, Roger. Now a future bright with promise has turned into a future charged with a danger so great that only a courageous humanity, a humanity willing to turn its back forever on the kind of experiments we've been conducting here can hope to survive."

"I shall lay all the facts before the wisest men I know. Fortunately a good many of these men are in key administrative positions on Earth. But unless my decision is accepted without question, unless all men of wisdom and good will join in a united effort humanity will cease to be humanity as we know it."

"There must be—a quarantine. The Station must be sealed off, isolated. No one from Earth must ever venture within its orbit."

FOR a moment the great scientist paused, then resumed in steady tones.

"What will happen to the Station in the course of the years I do not know. I cannot bring myself to do what perhaps should be done—destroy a source of infection which no power known to science can cleanse. The radiations are too continuous and pervasive. The Station is drenched with them, and the disintegration of matter which is still taking place here will continue for generations."

"We have confined that disintegration to the Station's eighty-nine power units, but it cannot be arrested without destroying the Station."

"I do not know what kind of Station you will find when you return, Roger. But this much I know. You will have the resolution to do what I cannot bring myself to do."

"I do not believe the mutants will endanger Earth, at least not during my lifetime. There are not too many of them, and it would

be unnecessarily cruel to hospitalize them on Earth. It is best, I think, that we order our affairs here so that the mutants may be spared. This place is where they belong. We understand them because we are linked to them by ties of kinship.

"But you are not, Reger. If, when you return, you feel that the Station should be destroyed—well, lad, there are weapons in the weapon room you will know how to use.

"Lad, I leave the future of the Station in your hands. Safe hands they are, kindly hands, but hands courageous enough to do what must be done. Goodbye, lad, and good luck!"

The screen went blank.

"Gale come back talk to man from sky!" a harsh voice shouted. "Him we slay!"

Sheldon swung about, all the blood draining from his face. A dozen shaggy brutes, their wooden axes gleaming in the cold light, were advancing stealthily upon him. In horror he saw that the one closest to him had seized Anne and was pinning her arms to her side.

"Roger, save yourself!" the struggling girl screamed. "They'll kill you!"

Sheldon's spine seemed to turn to ice. Probably he had never thought faster in his life. Or moved faster. With a sudden, desperate lunge he grabbed the projector, raised it and swung it fiercely toward the skull of the nearest brute.

There was a splintering crash, and a blinding flash of light shot from the collapsing instrument. It was followed by a pinwheeling blur of light which encircled the screen and then shot up toward the ceiling. The next instant all the lights in the library went out, suddenly plunging the big room in total darkness.

In the darkness Sheldon was aware of harsh breathing, grunts and savage snarls. For an instant he crouched close to the screen, trembling, collecting his wits. Then he stumbled forward, not breathing at all. He could feel perspiration running over his body, drenching him under his clothes.

Suddenly soft flesh brushed his arm and groping hands found his. He could see the girl's eyes in the darkness, bright with terror.

"Don't let go of me," she whispered hoarsely. "I can find the door. Let me guide you."

A moment later Sheldon was out in the corridor, running, with Anne at his side.

"We've got to get to the ship!" Sheldon's

voice was taut with urgency. "It's our only chance."

"I never thought they'd turn on me!" Anne almost sobbed. "But they're crazed—maddened by what they saw. They think you've come back to rule them at Gale's bidding."

Up a narrow stairway they raced, and along another corridor, and then out beneath the stars.

From the shadows the ship loomed, immense, shadowy, a shape that seemed all gleaming angles and spiraling curves.

A weird feeling of unreality took hold of Sheldon as he swung open the port, almost pushed Anne in and stumbled in after her.

But once inside his mind seemed to clear. In less than a minute he was at the controls.

White and trembling, he sat with his back to the terrified girl, his hands moving swiftly over the board. He could feel her body's warmth through his clothes. She was bending over him, her heart beating a wild tattoo against his shoulders, her breath fanning his face.

Suddenly she cried out.

"Roger, here they come!"

Sheldon stiffened with revulsion. He could see them now in the observation glass, a dozen stooped and shambling figures close to the yawning aperture of the central surface vent, their arms encircling short, massive weapons which gleamed in the steady light.

"They must have raided the weapon room!" Anne cried. "Those are atomic blast weapons. Pedal blast disintegrators, the micro-films call them."

**S**HELTON swung about.

"You didn't tell me they knew how to operate disintegrators!" he said, wildly. He gripped her shoulders as he spoke, so fiercely that she cried out.

"No, no, you don't understand. Gale forbade them to approach the weapon room under penalty of death. To them the room was taboo, the power weapons terrible living shapes of wrath. But rage does strange things to the mind. They must have heard what Gale said to you."

"But if they've never used such weapons, what does this mean?"

"That means nothing," she said, her lips shaking. "How much intelligence does it take to depress a pedal blast release? A child could try, couldn't he? Couldn't he, Roger?"

"Yes," Sheldon said, quietly. "A child could try. And those weapons would be far more dangerous in the hands of a child than they would be in our hands."

The veins on Sheldon's forehead were thick blue cords, and sweat dripped onto his fingers as he stared into the glass.

Suddenly a convulsive shudder shook him. In utter silence he swung back to the board and started tugging and jerking at the controls. Thirty seconds passed. A minute. Two.

In the glass a terrifying scene was taking place. The savages had drawn closer to the ship, and were converging upon it from three sides. As they advanced their lips writhed back from their teeth, and their hands tugged and jerked at the massive weapons which they were clasping now to their shaggy breasts.

"They're not—going to get—a chance to try," Sheldon muttered, fiercely. "Not much of a chance, anyway."

As he spoke the board began to vibrate and a dull, steady droning filled the control room.

Under the fierce blasts of her atomic jets the ship took off with a roar. It took off and then swept back over the Station as Sheldon strove to avoid the shattering backlash of a too suddenly released energy surge.

He swooped very low, almost skimming the highest of the Station's seven towers, and bringing the elevated central section so near that the landing platform filled the glass.

For a terrifying brief instant the tiny figures moving far below were visible in the glass. Then gigantic bursts of flame came in livid spurts from the almost invisible weapons in their clasp, blotting them from view, and sending a wave of thick, black smoke swirling over the platform.

Before the smoke could clear the ship was hurtling skyward, the Station dwindling in the glass.

It was some moments before Sheldon spoke.

"All those blasters went off simultaneously," he said, in a stunned voice. "For an instant I thought those devils were smarter than we'd given them credit for. But it wasn't their blind fumbling which exploded the weapons. It was the surge of energy from our stern atomic jets."

Sheldon's words died.

In the precise middle of the plate the Station hovered, enveloped in a luminous haze.

The explosion began at the edges of that haze. It began with something which reminded Sheldon of the sparking of crisscrossing electric wires in a turgid blanket of mist.

The sparking continued for a full minute, increasing rapidly in brightness and seeming almost to detach itself from the glass. It was followed by a tremendous surge of light that appeared almost to shatter the glass.

The instant the flash vanished the Station split in two. The two parts shot away from each other to hang for an instant suspended in the void. Then each part began to jerk about and split up into smaller and smaller fragments, while blast after blast lit up the screen.

The explosions continued for several minutes. When they stopped nothing remained of the Station but a hazy spiral of dissolving smoke.

**S**HELDON swung about slowly. He saw that Anne was crying. She was pressing a handkerchief to her face and weeping quietly into it.

Gently he put his arm about her and drew her toward him.

"The Station was an atomic tinder box," he said, tenderly. "The exploding weapons must have touched off a chain reaction. But it was swift and merciful, even for the little ones."

"I fed them when they were hungry, nursed them when they were ill," Anne said, in a choked voice.

Sheldon nodded. "You loved them, didn't you?"

Anne looked at him. Her eyes were eloquent.

"I know," Sheldon said, smoothing her hair. "Go ahead. Cry. You'll feel better if you don't try to fight it."

A small thing the Earth seemed at first, a mere pinpoint of winking greenness in the immense round glass. But it did not remain small. Its oceans and great continental land masses swept first into view. Then the surface of the land, spreading out and almost filling the glass, and finally—green fields and landscaped terraces, and little blue houses which seemed all windows, with old oaks and birches about them, on a high white cliff overlooking the sea.

Sheldon's eyes were shining as he set the ship down.



"Will you wait?" the doctor's daughter asked Randall

# CLUTCH OF MORPHEUS

By LARRY STERNIG

Only one man could save the earth from the fatal sleeping sickness induced by Rackam's comet—Wayne Randall, who had never slept in all of his entire life!

**A**T the doorway of the building that combined the home and laboratory of Dr. Felder, Wayne Randall almost changed his mind. Then he said, "What the devil. Why not?" and rang the bell. It would, he hoped, embark him on a great adventure—an adventure into a strange world he had never known.

A red-headed girl in a white uniform answered the ring. Wayne caught his breath at

the fresh clean beauty of the face framed by the sleek, wavy, auburn hair. At the contrast of that hair with the blue eyes. And at the slim but rounded figure.

Then he was aware that she had spoken, and flushed slightly at the realization of how hard he must have been staring.

"Is Doctor Felder in?" he asked, with embarrassment.

She nodded.

"Do you have an appointment? Dad is retired from active practice, you know. Doing research in anesthesia."

"I'm not a patient—exactly," Wayne assured her. "It's in connection with his research that I'd like to see him. My name is Wayne Randall."

She opened the door wider.

"Come in, Mr. Randall. I'll see if he's busy."

He waited near a window and watched the comet that hung low in the western sky. And in common with the other millions of people who were watching Rackam's comet of 1954, Wayne wondered whether the scientists were correct in stating that it would not affect conditions on earth.

But probably the astronomers knew what they were talking about.

The comet had changed amazingly since its first appearance. From a long graceful curve, its tail had now shortened to a broad-based triangle. In another day or so, comet and tail alike would be invisible from earth. For it was passing between earth and sun, on an orbital plane almost coinciding with the earth. The comet would be lost in the glare of the sun. Even now it was visible for only an hour or two of early evening. Earth would pass through its gaseous tail, was even now entering the outer fringe of those gasses.

Wayne Randall shrugged, and turned from the window. After all, the astrophysicists knew more than he. True, they disagreed as to the exact chemical composition of the comet's tail, but they were unanimous in saying that it was too tenuous, too insubstantial, to affect earth or its organic life. It would take hundreds of thousands of cubic feet of the comet's gasses to equal in density a cubic inch of air, they said.

Well, thought Wayne, if they were that thin, probably the physicists were right. He put the unimportant matter of the comet far back in his mind as the girl reappeared and escorted him to the laboratory.

Dr. Felder, a volatile little man with a pointed sandy beard and heavy shell-rimmed glasses, leaped up from a chair in which he had been sitting before a bench lined with cages.

He pumped Wayne's hand vigorously.

"Glad to meet you, Doctor Randall," he said in a voice that matched his handshake. "I can't recall your name, but so many are doing excellent research in narcosis today. Everybody but me." He turned back toward the work bench, ran an excited hand through his thinning hair, and then grimaced humorously. "My subjects seem too sleepy. None of these darned guinea pigs will stay awake long enough to act as controls."

Wayne Randall grinned. He decided he was going to like this excitable little man as

well, or almost as well as he could like his auburn-haired daughter.

"But I'm not Doctor Randall, sir," he explained. "Just plain Wayne Randall, and I've done no research in narcosis, except on the guinea pig side. My trouble is the opposite of theirs. They can't stay awake, and I can't sleep."

Dr. Felder's face fell.

"You mean you have insomnia, Mr. Randall? But that's not in my line. I don't—"

"Not insomnia, Doctor," Wayne cut in. "I've never slept. Not once. *Not in my whole life.*"

**F**ELDER'S eyes widened in amazement. "You mean you're *that* Randall? The chap Opdycke wrote a monograph about, and about whom Gneiss wrote a whole chapter in his *Anatomy of Sleep?* And that Leowenstein—"

Wayne nodded.

"When I was a kid back in Oshkosh my parents took me to a good many medicos. They sent me to New York for study. I got write-ups all over the country. Then it died down, and they let me alone a while. In college, I was discovered all over again. Once more they tried to make me into a guinea pig. And after college—"

"You disappeared," finished Dr. Felder accusingly. "Why? Man, your case is unique in medical annals! You're invaluable, but you simply disappeared. Why?"

"Possibly, Father," volunteered the girl, "Mr. Randall didn't want to be a guinea pig."

Wayne smiled at her gratefully. It wasn't hard to smile at Marcia Felder.

"That's about the size of it, Miss Felder," he stated. "People looked at me as a sort of freak. A person who didn't even know what sleep was, rather frightened them. I had to conceal my identity in order to be accepted by other people and to have friends. I've been living under an assumed name ever since my parents died."

"Hmmm." Dr. Felder looked thoughtful. "Yes, I can see that. What have you been doing with yourself since then?"

"For a while I held two jobs, so I'd have only eight hours a day to kill. Then I got interested in radio and built myself a short-wave set. Got so interested, in fact, that I gave up my night job so I'd have plenty of time to experiment."

"Ever feel tired?"

Wayne shook his head energetically.

"Not a bit, ordinarily. Of course if I do a lot of physical work, my muscles feel slightly weary. But a few hours of rest every couple of days, just sitting still, rests them up. And my brain—well, it doesn't even need that."

"Quite understandable. It is doubtful if the brain of a normal human ever complete-

ly rests. During sleep, it dreams. The mind goes on, but it is divorced from sensual contact with reality through normal nerve impulses, and imagines its own pseudo-impulses in order to— But the puzzling thing about your case, of course, is the ability of your muscles to revive without sleep.

"But I'm forgetting my duty as a host. Let's go into my office where we can sit down. Come along, Marcia, if you wish. That is, Mr. Randall, if you don't mind. You see, my daughter helps me in my work."

Wayne smiled assent. It would be better, he thought, to have Marcia Felder interested in him as an abnormal specimen, than not at all.

"My reason for coming to see you, Doctor," Wayne explained when they were seated in the office, "is that I've read about your new anesthetic you developed, novether. Do you think it would make me unconscious? All other known anesthetics have failed."

Dr. Felder knitted his fingers together and pondered.

"If I recall correctly the verdict of the doctors who studied you, the consensus was that you are a mutant, that the mutation consists of the restoration to activity of a gland of which man's ancestors lost the use, somewhere in the evolutionary scale, when they formed the habit of sleep."

Wayne nodded agreement.

"Many lower animals, of course, don't sleep. Their glands secrete into the blood something which renews cells of the vaso-motor mechanism. Forms of life which got the habit of hibernating during certain hours of the day or night gradually became more and more torpid during those periods. The dendrites learned to contract in an ameboid manner, shutting off the mind from nerve impulses. The gland became vestigial or was lost through lack of use, because the cells formed the habit of using this period of torpor for refreshment and—"

He broke off with a grin.

"But here I am lecturing someone who knows a thousand times more about anatomy than I do. Forgive me, Doctor."

"Nothing to forgive. Your statement was correct, if not technically expressed. But why do you wish to be anesthetized?"

Wayne leaned forward eagerly.

"Curiosity, Doctor. No other anesthetic does any more to me than make my head buzz a trifle. I'd like to sleep just once, out of sheer cussed curiosity to find out what it's like. I'd give anything to be unconscious just for a moment. To me it would be as momentous an experience as—as going to the moon would be to you!"

Dr. Felder wavered between a frown and a smile.

"Unethical, of course. But you've got me

curious, too. If no other anesthetic has worked— Well, take off your shirt and lie down on the table over there. Marcia, get the machine."

Ten minutes later there was amazement on Dr. Felder's face as he lifted the cone and signaled Marcia to stop the machine. Wayne's eyes, wide open, stared up at him.

"You felt nothing at all?" Dr. Felder asked, completely incredulous. "I gave you enough novether to knock out a herd of elephants!"

Wayne sat up and grinned ruefully.

"Well, there's a slight ringing in my ears, if that's any satisfaction. I guess Rackam's comet would have to hit me to make me unconscious." He reached for his shirt. "By the way, Doctor, do you agree with the other scientists that the comet gasses won't have any effect on conditions here, on the atmosphere, I mean?"

The little doctor looked up from his recording of the data on the experiment.

"Atmosphere's still normal," he observed. "We are in the outer fringe of the tail now. But one of my instruments has noted a slight electrical disturbance of a peculiar nature."

His eyes held a mild puzzlement as Marcia reappeared in the doorway after wheeling the novether machine back into the lab.

"I've asked the cook to send us in some coffee," she told them. She smiled at Wayne. "I hope it won't keep you awake, Mr. Randall."

Wayne laughed appreciatively at the joke—and promptly pushed the comet out of his mind.

It was almost midnight when he left the Felders. Marcia—he hoped she had maneuvered it deliberately—escorted him to the door alone.

"You'll come to see us again, won't you?" she invited as she offered her hand.

**I**T was on the bus, homeward bound, that Wayne first noticed it. There seemed to be an unusual degree of sleepiness among the people about him. In fact, everyone on the bus looked almost as if they were drugged, so soundly were they slumbering. The driver yawned frequently, and shook his head, presumably to help him stay awake.

Suddenly Wayne remembered Dr. Felder's trouble with his guinea pigs. They, too, had difficulty staying awake. Could there be any connection between them and the unseemly drowsiness of these people seated about him? He remembered now that the Felders, too, had seemed tired. And that when Marcia had gone for more coffee, she had joked about the fact that the cook had been sound asleep in the kitchen.

Back in his own quarters, Wayne was restless, unreasonably disturbed. His short-wave set was almost completely dismantled in the

process of trying a new idea of his in combined radio-audio frequency amplification. It would take all night to get it working again, he thought, and somehow he couldn't get himself started at the task this evening.

Abruptly he grabbed his hat and went out into the almost deserted Chicago streets. On Michigan Boulevard he caught a cruising taxicab with a sleepy driver.

"Where's the best night spot?" Wayne asked impatiently.

The driver pondered, rubbed his eyes tiredly.

"Most of 'em are closing early tonight, mister. Not many customers, for some reason. Air's muggy or something and people all seem to wanna go home. The 601 Club's still open though. Or was half hour ago." His mouth gaped into an enormous yawn. "Take ya there?"

His mind seething with possibilities, Wayne climbed into the cab. Could it be that—

The 601 Club was dark.

"Sfunny," drawled the taxi driver sleepily. "Never knew this joint to close before six in the mornin'. And it's only two. Whatta night. Heck, wish I could knock off early myself. Back home, mister?"

Wayne shook his head slowly, and his face became grimly resolute.

"If you can stay awake, pal, take me to the office of the *Chicago Blade*."

Ten minutes later he dropped his hat on a corner of the night editor's desk.

"Your gang sleepy tonight?" Wayne asked sharply, an undertone of excitement in his voice.

The editor looked at him incuriously and nodded.

"Me too. So what? We get out a paper anyway. What you want?"

Wayne gripped the edge of the desk and leaned forward, his body tense.

"Listen, this is important. *Everybody*—in Chicago at least—is abnormally sleepy tonight. Every night club in town is closed for lack of customers. Even the regulars went home to bed. And you should see the people who have to be out whether they want to or not."

The man's eyes opened wide.

"You sure? Say, that would mean—"

"The comet," snapped Wayne tersely. "The astrophysicists said it wouldn't have any effect, but they could have been wrong. We're in the fringe, and—"

The editor, with a visible effort, straightened up.

"Mister, if this is an exclusive, you'll get paid for the tip-off. What a story!"

Wayne smiled grimly.

"And what bank would I cash the check at, with all the tellers asleep? This is seri-

ous, I tell you! It might mean the end of the human race! If those gasses of the comet's tail—"

The editor grabbed a phone with unsteady hands.

"Hey, George," he barked into the mouth-piece, "put the whole staff on this. Have them call New York, Frisco, Los Angeles. Have them ask whether . . ."

A tired-looking reporter shuffled in, and leaned against the desk.

"Say, Bill," he said sluggishly, after the editor had replaced the receiver, "there's an epidemic of people driving cars off the roads and into poles and what-not tonight, like they fell asleep at the wheel. Want me to do a feature on it?" He caught the horror-stricken eyes of the editor and snapped out of his lethargic stance. "What's up?"

Wayne's eyes narrowed and he leaned again across the desk.

"That proves it," he exclaimed excitedly. "No need to wait for the answers to those calls. We know what they'll be. Let's get going."

The editor's face was pale, and now he could scarcely control the trembling of his hands.

"But what can we do?" he asked dismally.

"Call the observatories," snapped Wayne. "Wake up some physicists and get new air tests. Find out where whatever gas masks this country has are kept. Blast it, man, call the President!" . . .

The hands of the clock stood at three-ten. Crowded into the editor's office and overflowing out into the corridor was the entire staff of the *Blade*. The editor wiped sweat off his bald head and looked at them dazedly.

"Okay," he said. "I've been through to the White House. The President's declaring a state of emergency, whatever good that'll do. We've learned gas masks won't do any good. We've learned the air is one hundred percent normal. We've learned this thing is world-wide. Now on those other calls some of you've made—anybody got anything?"

"I got Ramsey, the biologist, Chief," one of the reporters volunteered. "He spotted something before we did. Been dissecting rabbits and stuff since midnight. Says something about dendrites. Want me to read his statement?"

The editor nodded, his facial muscles twitching uncontrollably.

"He said, 'Conscious co-operation of mind and body depends on neighboring nerve units being in contact with one another so nerve impulses can pass from neuron to neuron to reach the brain. In sleep the dendrites retract and separate, and the result is unconsciousness. Some influence whose nature we do not yet understand is causing the

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nerve dendrites of earth's mammalian life to retract, bringing sleep. The action is not chemical, as air is normal. It may be electrical, although we have yet found nothing to indicate that is the case. The effect, however, is not lethal.

Someone drew a sharp sigh of relief.

"Not lethal! And here I thought I wouldn't have to finish paying for my helicopter." A murmur of amusement rippled through the crowd and helped to relieve some of the tension. But some of the men noticed that their chief had remained unmoved.

"S'matter, Bill?" one of them asked. "It won't hurt to sleep a day or so. Gosh, the way I feel now, I could—"

Wayne answered the question, his voice flat and gray.

"A day or so? We've checked the observatories, can't you understand? That comet is rounding the sun in the same direction as Earth, and in the same plane. We'll be within in the comet's tail for two and a half months. And the world will starve to death in its sleep!"

A thunderbolt silence struck the room.

"Maybe it isn't the comet," someone ventured presently.

But there was no conviction in the voice. What hope was there that it wasn't? Nothing like this had never happened before. But now it was happening exactly coincidental with the fact that Earth was entering the tail of Rackam's comet.

Suddenly the night editor galvanized into action.

"Hey, you guys, we're getting out a paper here. An extra at that! Get busy. Stop moping! You, Callahan, write—"

QUIETLY, Wayne Randall slipped through to the corridor and went down to the deserted street. There was no cab or for that matter no moving vehicle of any kind in sight. He started walking, his thoughts filled with dark foreboding.

Wayne knew now that there was something worse than fear of death. Of all the people on earth, he suddenly realized, only he would not feel the effect of this unknown sleep-producing agency. His dendrites didn't contract, they had said. Maybe he didn't have any dendrites, whatever they were.

Yes, worse than the fear of death was the stark, overwhelming fear of being completely, utterly alone. Probably within a few hours, a day at most, he would be the only person awake in Chicago, in the United States, in the world! Left awake to watch humanity die. Even sweet, radiant Marcia, whom he had just found.

Resolutely, he thrust the thought away. He must keep his mind clear, until he was

(Turn to page 98)

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certain there was nothing he could do. There would be time for demoralization, madness. Plenty of time.

He must think coldly, logically. The air was normal. It was suspected the influence possessed electrical properties. A field, perhaps? Some sort of electro-magnetic field that affected neurons? Why not? What man didn't know about electrobiology would fill volumes.

Even in radio, his own field, there was plenty of scope for research. A sudden hope shot swiftly through Wayne's mind. There were powerful broadcasting stations scattered all over Earth, and their waves covered all of the globe. Would it be possible to send out waves, short or long, which would damper or neutralize the menacing field?

It seemed such a desperately slim chance, there was so little time in which to work—but it was a chance, nonetheless. And Wayne determined to exhaust it thoroughly.

Spotting a cab parked across the street, he yelled at the driver, ran toward him. Loud snoring came from the front seat. Wayne tried frantically to wake the cabbie, but hard and repeated slaps on the back only changed the tempo of the snores. Finally Wayne pushed him to one side, slid behind the wheel and a moment later was speeding through the desolate streets toward Station WRV.

WRV, he knew, would be the best bet. Not only was it one of the most powerful stations in the country, but there was an excellent experimental laboratory equipped for research. And perhaps it was even possible that one of the technicians or research men had struck upon the same idea.

It was dawn when he parked the cab in front of the big building that housed the broadcasting station. The policeman on guard at the doorway was—sound asleep. Wayne ran past him and up the stairs. He'd been here before, as a visitor, and knew where the laboratory and workshop were located.

A haggard, red-eyed man in overalls that had been pulled on over pajamas met him at the open doorway of the lab.

"Thought I heard someone coming. You a research man? I'm Grayson. Look"—he waved a hand that pointed first to one part of the spacious laboratory and then another—"all asleep. I'm holding out on caffeine citrate. Took ten grains."

Wayne peeled off his coat, tossed it on a chair, and stepped across a figure lying prone on the floor.

"Got anything yet?" he asked tensely.

"Not much." Grayson swayed on his feet as he spoke. "Guess it's too late, but I'm going out trying. You look fresh, maybe you can carry on. Here, let me show you."

He led the way across the room to a huge mechanism.

"Burkewell super-microscope. Living nerve-tissue in a nutrient solution in focus. There's the projection. See those curly little things, retracted? Rogers, the biologist, set it up for us before he passed out."

"Any clues as to the nature of the field?"

Grayson lighted a cigaret with trembling fingers.

"We can't even prove there is one. None of our instruments show a thing. It's only living tissue that shows any effect. We deduce a field just because it can't be chemical. Good old Chicago air. Checked fifty ways. Qualitative and quantitative tests."

Wayne bent over the chassis of a small transmitter that was already plugged into operation, tubes glowing brightly.

"I suppose you've tried all bands straight. How about super-hetting for a beat note. Maybe you can synchronize—"

Abruptly, there was a soft, scraping sound behind him and he turned swiftly. Grayson had leaned or fallen back against the wall and was sliding down to the floor. Before Wayne could reach him, his knees buckled under and he fell, lay breathing heavily.

Knowing it would be futile to attempt reviving Grayson, Wayne turned back to the set. Now he was alone in the laboratory, except for a dozen men who slept where they had fallen during their efforts to combat the unknown.

Even as he worked, changing wires almost haphazardly, Wayne realized the utter million-to-oneness of his chance of success. He didn't know a single concrete fact about the nature of the electrical or magnetic field he was trying to neutralize. He couldn't even be sure there was one. None of the instruments—

Suddenly Wayne stopped working and his eyes lit up with excitement. The word "instruments" stirred something in his memory, something that might be important.

He had it! Dr. Felder—it seemed like ages ago but it had been last night—had said, ". . . one of my instruments has noted a slight electrical disturbance of a peculiar nature." And that had been before the confirmation of the soporific effect of the comet's tail. And Dr. Felder's guinea pigs—

**E**VEN as his mind whirled with this new thought, Wayne was running out of the building into the street. Had Dr. Felder left any notes on that "disturbance of a peculiar nature"? If he had, it would prove a real lead. Something to work on. Even searching Dr. Felder's home for a strange instrument that had reacted where others failed, was better than hunting blindly here in the laboratory.

[Turn page]

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The taxicab with its slumbering driver was still where he had parked it. Excitement running high within him, Wayne jumped in and gunned northward. He was astonished to discover that the sun was almost straight overhead. He'd been at the WRV laboratory a good six hours.

Along Michigan Boulevard there was no sign of life, save for people sleeping in parked cars or on the sidewalk. Some vehicles were stalled in the middle of the street, but others Wayne noted grimly had smashed into store fronts or light poles.

It was a world of vast, motionless silence in which nothing stirred save Wayne and the taxicab he had commandeered. In all of Chicago, probably in all the world, Wayne Randall, who had never experienced the sensation of sleep in his life, was the only person awake.

The tires squealed protestingly as he swung in to the curb in front of the Felder home. Impatiently, Wayne dashed up the steps. The iron bonds of habit made him ring a doorbell he knew wouldn't be answered, but he stalked into the house without the formality of waiting.

"Doctor Felder!" he called out loudly. There was only the hollow echo of his own voice for answer.

Swiftly Wayne began to search the house. There was little chance of finding anyone awake or being able to awaken them when found, but at least he'd make certain before searching the laboratory.

Frantically he ran from room to room. But the house was ominously vacant, deserted.

He rushed with mounting desperation to the laboratory. It too was deserted. Then Wayne's eyes riveted on the microscope, much smaller than the one at the WRV lab, but constructed on the same principle.

Hope skyrocketed his spirit when he saw what lay beneath the microscope lens. Nerve tissue in a nutrient solution. Perhaps this was the clue! But when he peered closer he saw that the tissue was dead, had long ago exhausted the solution. It must have been some time last night that Dr. Felder had put it there.

But he had been working on the problem then, independently! Surely, somewhere, there must be notes on the experiment. Hastily, Wayne rifled through the papers in both the office desk and the one in the laboratory. Nothing, not a single paper seemed to have any bearing on whatever research Dr. Felder had been conducting. Wayne turned away with a sinking heart.

Had the doctor truly solved the problem? And started somewhere with his answer? Suddenly Wayne remembered that there was a garage beside the house. If Dr. Felder had

gone somewhere, his car would be missing. Quickly Wayne ran out the back way and through the side door of the garage.

The car was there! And seated in the gray sedan were two slumbering figures—Dr. Felder and his daughter, Marcia. What had happened was obvious. Dr. Felder had succumbed to sleep the instant he had settled behind the wheel, before he had even turned the ignition switch. Probably Marcia had tried to awaken him, and then fallen back, unable to stay awake any longer herself.

But it was the leather portfolio on the seat that magnetized Wayne's attention. His hands trembled as he opened it and began scanning the several sheets of scrawled notes, and a diagram. A hook-up diagram for a radio transmitter!

It was midnight when Wayne Randall stumbled from the control room of WRV into the laboratory. On the floor, figures were beginning to stir. Grayson, the head technician, opened his eyes. He stared at Wayne blankly for a moment, then scrambled to his feet.

"Man alive!" he cried exultantly, "you've done it!"

Staggering with weariness Wayne fell into a chair.

"It was Doctor Felder," he said in a voice leaden with exhaustion. "Give him the credit. He and his daughter are asleep, in the reception room. I brought them there. Guess they'll be waking up any minute."

Other men in the laboratory were now beginning to sit up and stare. Wearily, Wayne handed the diagram and notes to Grayson.

"This station should cover the Middle West. As soon as you can get in touch with other stations, Cincinnati, Louisville, Montreal, and the others, give them this dope. They'll be able to pass it on to stations in their range as soon as they're changed over. They can pass it on east, west, north, and south. New York can reach Europe, and—"

He closed his eyes to rest them a moment, then felt a curious sensation of limpness, re-

[Turn page]

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laxation flow over him. Grayson started for the control room but before he reached the door, two figures appeared in it—a short wiry man with sandy hair and beard, and a beautiful auburn-haired girl.

Dr. Felder spotted Wayne immediately and rushed across to him. He addressed him and when Wayne didn't move, didn't answer, the doctor hurriedly felt his pulse, then peeled up an eyelid and examined the pupil.

"Dad!" Marcia's voice was frantic. "Is he—"

Dr. Felder turned and looked at her understandingly.

"He's all right, my dear. And he'll be all right if we take him home and give him care and intravenous feeding. But"—the doctor chuckled softly—"I'm afraid that the damper wave that will keep everyone else normal has finally made him sleep. He's in for a ten-weeks' stretch of it, until the comet's gone and we can convert the transmitters back to normal."

### THE READER SPEAKS

(Continued from page 10)

Now for a report from the South Pacific. By Jupiter's atomic stopwatch, it's mellow too!

### PLEASANT SAILING

By Gene Hunter—S 1/c, USNR

Dear Sarge: It's been a long time since I've penned a letter to you, but perhaps you and a few other readers of *The Reader Speaks* will remember me. For several years now I've been griping pretty constantly to TWS and its companion magazine, but I want to be a square dealer. As you may remember, I've never hesitated in panning your mag, but I don't believe I've neglected praise when it was due. And just now you're certainly deserving of a bit of praise.

The Summer (August) 1945 issue of TWS arrived a few days ago, and is the subject of this note. According to the Hunter system of rating (or "reducing stories to a mathematical basis" as you put it some time ago) it appears that, with an average of 2.9, this latest *THRILLING WONDER STORIES* is the best mark of any STF magazine I have graded.

Despite the fact that a listing of stories is considered taboo by the best letter-hacks, I'm giving with a few comments on the fiction content.

1. **THE WORLD-THINKER**—Jack Vance—3.5. I'm pretty sure this is the first thing I've read by this seafaring young writer, but I'm hoping to see a lot more. I could go on to say more, but placing him above one of science-fiction's greatest veterans, Murray Leinster, is compliment enough for any newcomer.

2. **THINGS PASS BY**—Murray Leinster—3.5. A sequel as good as the original is quite rare, and only a fine writer such as Leinster could accomplish it. His return to science-fiction in the past few months is more than welcome.

3. **THE SHADOW DWELLERS**—Frank Belknap Long—3.0. Here we drop a notch from "very good" to "good." For such a prolific writer, Long sets a fine pace. *THE HOLLOW WORLD* in *STARTLING STORIES* a few issues ago was also excellent—rating 3.5, in case you're hungry for statistics—and, I believe, the only John Carstairs story I've really enjoyed.

4. **THE DECONVENTIONALIZERS**—Edmond Hamilton—2.5. Nice light yarn, rather dated, but still interesting. The so-called "hacks"—a degrading expression—I prefer "professional writers"—turn out a larger

percentage of good entertaining fiction than most fans like to admit.

5. **PERCY THE PIRATE**—Henry Kuttner—2.5. The same remarks might go for Hank. He's been one of my favorites for a long time.

6. **THE PURPLE DUSK**—Leslie Northern—2.0. Perhaps I'm at fault here. I admit I didn't read it very closely, since it failed to hold my interest. Sorry, Les, I don't happen to care for your stuff. (All right, so I'm candid.)

Special congratulations to Bergey for his cover painting. Well drawn, nice coloring, well proportioned—I liked it. Very good. 3.5. The interior art work fell down a fraction from the preceding few issues. I suppose Thomas did the pix for *THINGS PASS BY*, etc. He averaged 2.8. Marchionni caught me when I wasn't looking and snagged a 2.5, and Morey—well, I dislike Morey intensely. He received only 2.2.

Incidentally, in this Thomas-Donnell mixup, it would save a lot of trouble and time if you'd give the artists credit at the beginning of each story.

Well, Friend Saturn, there it is, 2.9 for the entire issue, compared with 2.3 a year ago and 2.7 last time.

I realize this is overly long, and a little late, no doubt, but thought you might like a few compliments from me, instead of my usually acid comments anent TWS and SS. I hope you print it, too. Being an egotist, I like seeing my name in print.—*South Pacific*.

Okay, Gene, and thanks from all four of us—Snaggletooth, Frogeyes, Wart-ears and ye aged astrogator—for that one.

We strive to please and it pleases us to know we have and do. As to the illustration jam, how Donnell and Thomas get confused in readers' minds (yes, they have 'em. Warty old ears, believe it or not, and ye Sarge usually doesn't), has us stopped cold. The artists in question don't even work in the same medias, Donnell using pen and much finer dry brushwork than Thomas, who employs white heavily and goes in for bolder strokes.

And if we listed the illustrators, how could you fans fall flat on your faces and get into such amusing disputes? No, let 'em stay as is!

## TRUCULENT TRUCANO

By Guy Trucano Jr.

Dear Sarge: Well, you bilge-hound, to make up for a long and uneventful absence, I'm here again.

And I'll actually begin with a compliment. The cover actually does depict a scene in the novel. Unusual, to say the least, you know.

What ho! To the stories and all that sort of thing.

1. **THINGS PASS BY**—not too bad, but why the table of contents heading—"astonishing"? The story was definitely okay, though.

2. **THE DECONVENTIONALIZERS**—Sorta funny giving second to a short, but I liked that deconventionalizing idea. Why did old Carr have to try to stop the trend, though. I've always thought that the world might be a better place if everybody didn't care so much about public opinion. Of course, there'll be a lot of people say that's a lazy man's opinion, but still, you've gotta admit it would be interesting.

**THE SHADOW DWELLERS** and **THE PURPLE DUSK** came pretty close together on the next spot. Both fairly good stories, but not exceptional. Percy the Pirate should have been staged on a transcontinental airliner, and put in an ordinary adventure mag. Didn't seem too much at home in TWS.

**THE WORLD THINKER**—certainly a novel idea, anyway, and the story started out well enough. It seemed to bog down for some reason or other. Really a good story, but I just didn't like it.

And now, the interesting part of the mag. I heartily disagree with Wells. If anyone wants to read about the telephone or radio, he should look in a physics book or electrical information mag, not in a science-fiction mag. I think there are very few people who pick up TWS hoping to find the latest info on radar. And if they did find it, you would have a fine time.

[Turn page]

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trying to call it prophetic fiction. Anyway, there are a good many stories that have radar worked in. If the authors used appliances in their stories that are common to everyone, what would be the sense in calling it science-fiction. Just another adventure story.

And now comes Cosby. Something tells me that there will be a good many letters telling him off, so a sensible view of his letter might help. In the first place, most science fiction fans like fantasy, too. I'll go farther and say most of them like a mag combining the two. Altogether, there is much less fantasy than sf. I am one of those who like the stuff mixed. One or two fantasy stories in every issue.

Tom Pace has an idea there when he mentions 'poor underfed moronic' fans. You ought to furnish a pound of hamburger with every copy, just to give us enough energy to stand the shock. Three weeks without beef! Please let me in the army!

Why don't the artists sign the inside pix? Pages 11, 13, a darn good one, too, 17, 37, also a good one, all the pictures except 68 and 79, were, so far as I could tell, unsigned. And I couldn't decipher the name on page 68 anyway.

Well, old booze-barrel, I'll be darned if I can find another thing to yell about.

Oh, by the way, is it possible to get a subscription to this excuse for a lively evening? You'd better say yes and let me subscribe, because otherwise one of these issues is going to cure me of buying the darn thing. If I've got a subscription, I suppose I'll be reading it until my long gray beard gets soaked in the Xeno.—Box 1094, Dickinson, N. Dak.

Yes, you can get a subscription, Guy, by simply writing in for one and enclosing your check or money order. But that won't get the illustrations signed. Ye Sarge has elected to maintain an attitude of stubborn insobriety on that subject, so drag on a new keg of Xeno, Snaggle.

As for Cosby, he got told off plenty by any number of fans fed with filling out OPA and other government-initial what-have-yous. On the subject of hamburger, get your own beef!

## NOT IF WE SEE YOU FIRST

By Henry Elsner Jr.

Dear Sarge: After a whole year of mediocre issues, TWS has finally come out with a decent "novel". I'd almost lost hope for the mag, for each issue was becoming worse than the preceding one. The short stories were the only ones worth reading in the last four issues. Personally, I think that this downgrade trend in TWS is due to the introduction of light fantasy and those too-numerous "funny stories" which are more often moronic.

As has been evidenced by some of the letters in "The Reader Speaks", we fans are beginning to wonder what happened to the good ol' TWS of the early '40's. Sgt. Dirk Wylie's letter amply expresses the attitude of most of fandom. However, since active fandom composes only 1% of the readers of any magazine, I guess we'll have to abide by what the majority of the readers want—and there's always the alternative of not reading the magazine altogether.

In spite of all this, I still believe in giving praise where praise is due. And so, even if it is only one out of five, the Summer TWS was good; in fact very good, after that other stuff.

I was not shocked by the cover because I subscribe to FANEWS and saw a photo of it before I saw the mag. I suppose I should kick about the subject matter on the cover, but I know it won't get me anywhere, so I'll not say a word about it. At least the color combinations were pleasing instead of those clashing blues and greens we've been getting. More black backgrounds please. Your interior art is getting to be pretty good, though the subject matter is still rather corny at times. Best interior pix this time are the one on page 17 for THINGS PASS BY, the one on page 37 for THE WORLD THINKER, and the one on page 68 for THE PURPLE DUSK.

As for the stories themselves, THINGS PASS BY is unquestionably the best in the issue. I think that the most outstanding factor in making this story so good was its slant. Instead of the typical TWS slant, it

seemed to be written along the lines of one of Campbell's stories. If you had had some hack write the same story on TWS's present slant it probably would have been like this: Title—MONSTERS FROM SPACE. The hero would probably have blown Atomic Power Co. to bits to get his time-fields; invented a super-super gun to destroy the invaders; raided the invaders' scout single handed and brought the whole crew back as a souvenir. I'm glad to see that the story was nothing like that. Plenty of science in THINGS PASS BY for us fans to mull over. I hope Leinster keeps up this type of writing for TWS, and doesn't revert to the hackneyed style evident in THE ETERNAL NOW.

Second place is very close between PURPLE DUSK and THE WORLD THINKER. As I read Sif chiefly for the ideas contained therein, I think that PURPLE DUSK is slightly better than the other story. I always like these psychological stories.

THE WORLD THINKER was well-written, but seemed rather plotless and more or less just an excuse to describe a lot of alien adventures. Good, nevertheless. By the way, the idea of Laoome, the World Thinker, was used in a much more striking manner in DREAM'S END by A. Connell, in the December, 1935, WONDER.

The remaining shorts weren't too bad, but didn't come up to the preceding short stories by a long ways. About the best was THE DECONVENTIONALIZER. I myself don't care very much for the dictates of convention, but I never thought about what would happen if everyone was deconventionalized. Glad to see that Hamilton is acquainted with the works of such a brilliant man as Thorstein Veblen.

Long's story was fair, chief trouble being that the idea wasn't fully developed in the story. Kuttner's story was pretty bad. After this and that horrible BABY FACE, by the old master Kuttner, I'm wondering what SWORD OF TOMORROW will be like. I hope it will be in Hank's old style again. I'll never forget A MILLION YEARS TO CONQUER.

The READER SPEAKS was fair, not as good as usual. At least Kennedy wasn't in it. I used to think that his stuff was actually funny, but it's gotten to the place where to say the least. Joke's writing has an odoriferous aroma. My nomination for the best example of editorial asinity of the year goes to your statements anent the U.S. Rocket Society. Sif is supposed to be written in the spirit of progress, yet when some chance comes to materially advance the things that Sif stands for, you ridicule it! That was the most nauseating stuff I've ever read by any editor.

Well, this letter is beginning to read like one of my fanzine articles, so I think it's time to stop. See you next time.—13618 Cedar Grove, Detroit 5, Michigan.

Calling Joe Kennedy . . . calling Joe Kennedy! ! ! Have you been drafted or did mama spank? Such insolence to both the Dover Dar-  
konian and ye Olde Astrogator must be avenged and *muy pronto*.

Frogeyes, get into one of the VV (vaporized venom) rockets and swoop down to Jersey—yes, it's that marshy spot west of New York City—and find out what gives. The Jersey joke hasn't pennied us an epistle in too many a moon. And just when there were beginning to be so many of him. Zounds—perhaps an atomic bomb liquidated the whole tribe. Or maybe they just lack *lebensraum*.

At any rate, ye Sarge must not be kept longer in ignorance. As to the moon rocket blast, ye Sarge has already said all he intends to on the subject. What he wants is articulate rocket clubs. Yours for more nauseaition to come!

## WHY DOESN'T ZIZA SCRAM?

By Ziza Schramm

Dear Sarge: First of all I won't try to be amusing. I'll leave that up to the more talented readers of TWS. I just wish to toss you a few orchids and onions. Since I have been an ardent Science Fiction fan for a

[Turn page]

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few years I feel that I may exercise my inalienable right of griping.

Gripe No. 1—The cover! Why, oh, why do you have such insipid pieces of so-called art covering a really good magazine? People who otherwise might become interested in science fiction, hesitate to be caught with such a lurid looking magazine. Such was the case in my family. My mother was at first reluctant to have your magazine in the house until I persuaded her to read some of the stories, now she enjoys them as much as I do.

Gripe No. 2—TWS doesn't come out often enough. But since I know this is not your fault, I won't complain.

I shall now rate the stories in the summer issue according to your system.

Things Pass By—7 jugs. It wasn't half as good as I expected it to be.

The World Thinker—5 jugs. This story had great possibilities but never fulfilled them. Too bad.

The Shadow Dwellers—8 jugs. This was the best story of this issue. By the way, where did the title come in?

The Deconventionalizers—3 jugs. There was absolutely nothing to it. While reading it you were always expecting something to happen.

The Purple Dusk—5 jugs. This is definitely NOT the type of story for TWS.

Percy The Pirate—1 jug. UGH!

I think C. D. Cosby has a good idea. About the ballot I mean. YOU said to use it as a sample ballot, so here goes nothing.

1. One full length novel.

2. Two full page and two half page illustrations for above mentioned.

3. 30 to 50 pages for the novel.

4. Two novelties per issue.

5. Four short stories per issue.

6. One article would be sufficient.

7. Departments—  
a. Readers Dept. (naturally)

b. An editors' column wherein authors, stories of past and future issues would be discussed, and also other topics of interest.

8. I don't care one way or the other about trimmed edges.

9. A great big yell in favor of the annual.

10. 10 or 12 stories per annual.

11. I would be willing to pay 30c. I have no idea of the cost of printing a magazine, but I imagine this would be enough.

12. A companion fantasy magazine would be just wonderful.

13. Every month.

14. Every month.

15. Series stories are perfect.

16. I definitely do not like serials.

17. Favorite authors and illustrators.

a. Leigh Brackett

b. Ross Rocklynne

c. Henry Kuttner

a. Virgil Finlay

b. the Magarians

c. Hannes Bok

Well, that's that.

From my letter you wouldn't think I cared two shakes for your magazine. But really I do like it a lot, and as long as you continue to publish stories like Fog Over Venus (Winter issue) I shall continue to like it.

You will probably hear a lot from me now that I'm learning to type.—1328 Fifth Avenue, San Francisco, 22, California.

You would ring in the Cosby poll on us! Wart-ears, you must have slipped that letter in while ye Sarge was squeezing the juice from two jars of Xeno for his matinal uplifter. Go dip your head in a pail of aqua pura as punishment—and hold it there until ye Sarge tells you to take it out!

About all this Old Space Dog can say, Ziza, is that while we agree on Finlay, we prefer Wilbur Thomas to Bok and the Magarians, and

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Verne S. Stevens infinitely to the whole kit and kaboodle.

## NEOPHYTE NOTE

By William G. Matthews

Dear Sarge: Having been an avid science-fiction reader for nine years, I feel myself more than qualified to write you a letter. Since I have never written a letter to any science-fiction mag before in my aforementioned nine years, this is, needless to say, a difficult feat for me.

But let's get on to the summer ish of T.W.S., shall we?

First, the cover: Ah, that man Bergey goes from bad to worse to superb. The cover for the summer ish far surpasses anything that he has ever done.

Second, the pics: Those for "Things Pass By" were excellent. Who did them anyway? The style vaguely suggests Stephen Lawrence, but whoever he is hangs on to him. The one for "Percy the Pirate" was fairly good, but the rest were terrible, especially that for the "World Thinker."

Third, the stories:

1. "Things Pass By"—Par excellence! A good plot coupled with delightful reading makes it a superb novel.
2. "The World Thinker"—Unusual plot, although it does have shades of some others I have read.
3. "Percy the Pirate"—A readable story, but not up to Kuttner's usual standard.
4. "The Shadow Dwellers"—An old plot, but Long did something to it that no one else could do.
5. "The Deconventionalizers"—I am very disappointed in Hamilton. I did not think he was capable of writing such hack. But then every writer makes a slip now and then.
6. "The Purple Dusk"—Takes first prize of the year for being the worst piece of work done. It will, no doubt win the National Tripe Award for 1945. Northern has his psychology a little mixed up. No one should know better than I, who without a doubt am the greatest forthcoming psychological brain in the country. (P.S. Thorndike and Adler agree with me too.)

If one Chad Oliver of Crystal City, Texas, will take another look at the cover of the winter ish he will find that Bergey used a light blue which darkens toward the top, not a yellowish-red. Better have your glasses changed, my charming little neurasthenic.

Say you trout-faced old Xeno gulper, how about a lead novel by Jack Williamson in a future ish. I've been missing him from the pages of T.W.S. for quite a while. Could ya, huh?

Well, it's about time for this astrogator to sign off so ye olde Sarge can pave the way for someone else.—115 Broadway, Keyport, New Jersey.

And we can pave quite a highway with some of those bricks you tossed.

## THIS HAM HAS LOST ITS CUNNING

By Gwen Cunningham

Dear Sergeant Saturn: I'm a fan of all STF tales, so I have to write a very short letter with no nonsense in it, about how much I liked "Things Pass By" by Murray Leinster. And no less marvelous was the cover, a distinct beauty and worthy of honorable mention for masterpiece of the year.

"Shadow Dwellers" I liked too. It wasn't marvelous, but I go for stories of true love—who doesn't? So that was good, in my opinion. Long usually is a good writer.

I didn't understand "Purple Dusk" because mechanics are Greek to me. But I liked the story. And Levering was a swell character. Will there be sequels? I'd not mind a couple at least, if on the same level with "Purple Dusk."

Kuttner's pirate story was corny. Chad Oliver writes so often to you I just refuse to brag his letters up, though they are good. So I want to give a big smile to Roy Allen, S 1/c of the USN. His letter was short, not gaudy, but good. More like them, please!

Sorry I can't go on and on, but I've written letters

[Turn page]

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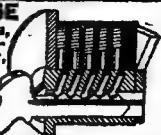
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lose the others, is a fact that should be impressed on all would-be stf authors.

One important illustration of why TWS readers go mad:

For a long time you have been getting letters pleading with you to print the artist's name on who does the inside illos for various stories. But it never came about. Now you spring two artists on us, who do approximately the same work, shuffle their works up, delete their signatures, give no clue as to who does what and then give us fans heck for not being able to tell Thomas from Donnell!

Please, only one sentence is needed to credit the artist with his or her work either under the blurb or on the contents page. Consider yourself told off.—68 Madbury, Durham, New Hampshire.

Thanks, Boff, old Vulcanian furred bean, but your squawk has already been answered to the satisfaction of ye Sarge if not of ye Perry. You'll simply have to develop your artistic discrimination to a higher pitch of efficiency. Next?

## PACE VOBISCUM

By Tom Pace

Dear Sarge: Bergey seems to have hit the jackpot this time. Boy, what a cover! A businesslike rocket control room . . . lots of very black space, with stars . . . and what an embrace! No BEM to spoil their bliss either. The maid is lovely . . . more of same. Such legs! The hero, of course, looks slightly sick. Something he et, I guess. But what an embrace!

Leinster's novel is darn good. Better than "Eternal Now." TWS is better than usual this issue. Its novel gets the number two spot in my estimation.

One goes to Jack Vance's "The World Thinker." When you said, ". . . one of the most brilliant new careers in stf history . . ." you weren't kidding. I won't go into rhapsodies about Vance's yarn though it would be very easy to do. I'll just say that for fresh, vivid, imaginative writing this is a grand story. I like off-trail stuff anyway. More by Vance.

Where in h—l is the amateur yarn this issue?????

Three is a tie between Long's "The Shadow Dwellers" and Kuttner's "Percy the Pirate." The first is good stf and after Long's slightly hackish TWS stories, wonderfully non-hack. Kuttner's story is swell. How many writers could have kept a yarn with such subject matter from degenerating into tripe . . . and aging tripe at that? Very few, bub, very few. And Hank Kuttner is one of them.

Hamilton's "The Deconventionalizers" is four. A heckuva thing for modern society to rest on—fear of each other's opinions! Northern's "The Purple Dusk" is last, but good anyway.

I apologize for mixing Orban with Donnell. . . .

The letter-writers fume on. So does the Sarge. What in hades are Frogeyes, Wart-ears and Snaggletooth? Venusian androids?—Eastaboga, Alabama.

The Sarge would like to know too—about his three co-inhabitants? Perhaps some of your readers can tell him just what Frogeyes, Wart-ears and Snaggletooth are. Please! As for the amateur story, Tomaso, there simply hasn't been one fit to print in many a long Neptunian moon. Why don't some of you kiwis take another crack at one? Ye Sarge keeps his lookouts posted always for joyous tidings of a real discovery.

## FALLING GREENLEAF OF AUTUMN

By E. E. Greenleaf Jr.

Dear Sarge: A few days ago I saw on the newsstand the name THRILLING WONDER STORIES. I grabbed the mag and looked at the cover—then at the title, half expecting to see that I'd picked up another magazine by mistake. But no—across the top in big

(Concluded on page 113)

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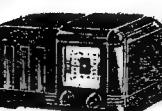
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# THE STORY BEHIND THE STORY

SINCE three headliners appear in this issue of THRILLING WONDER STORIES and since all three authors have commendably compiled confidential



memoirs of how they composed their various opera, we'll turn to their letters without more ado.

First on the list is that famed veteran of the fictional spaceways, Edmond Hamilton himself. Ed, whose FORGOTTEN WORLD is our current featured novel, has an interesting theory behind his tale, a theory which is herewith brilliantly expressed.

It has often seemed to me that in stories of interplanetary and interstellar conquest, not enough attention is paid to the psychological hazards that would be encountered. Yet they would be as dangerous as, perhaps even more dangerous than, the purely physical hazards.

Take, for example, as simple a thing as homesickness. It doesn't sound dangerous. You think that surely, if and when men succeed in colonizing other star-worlds, they won't let a little homesickness bother them.

But think again. Polar explorers, cut off from the rest of the world for months, have repeatedly stressed as one of their greatest torments the terrible feeling of isolation and nostalgia for familiar scenes. That feeling has sometimes become such an obsession that it drove men insane.

And yet that's right here on our own Earth, only a thousand miles or so from civilization. But suppose you're on an alien world so far away that our Earth and Sun are only specks in the sky. What would happen in the minds of a group of colonists isolated under such conditions? Wouldn't that terrible nostalgia be intensified many times? It would take the toughest-minded of individuals to stand up under that strain.

There is another, perhaps an even more potent, factor that would present a grave psy-

chological hazard to Earthmen on another world. That's the *unsureness* about everything they would feel. Here on Earth, we have a certainty of knowledge and habit so deeply based in our minds that we never even think about it.

We've spent our whole lives getting to know our environment here, and we know it to the last detail. We know just what a thunderstorm will look like, just how hot a summer day is likely to be, just how a small animal will react if we run across one, and so on, in a million other details.

If you change our familiar environment even a little bit, if for instance you take a temperate zone dweller suddenly to the tropics, he's likely to feel somewhat bewildered and upset by the strangeness of everything, the *unaccustomedness* of it. But if you take an Earthman to a totally different world, that dismaying sense of ignorance and bewilderment will be multiplied a thousand times.

He won't know the simplest things about the place, at first. That sense of continual uncertainty, that straining strangeness, could be a grave threat to mental stability.

Considering these and other mental hazards, more than one writer has suggested that for interstellar colonization it would be necessary to breed new human races to fit the new conditions. The British scientist, J. B. S. Haldane, proposed as much some years ago, pointing out that it could be done by genetic manipulation.

The trouble with that plan is that if you radically change your Earthmen to fit new conditions, then they'll cease to be Earthmen at all. If there are as many different races as there are colonized worlds, there can't be any community of thought and interest—instead there will be a growing divergence of ideals and sympathies which would inevitably wreck the unity of any colonized universe.

For that reason, it has seemed to me that the only solution would be for Earthmen to take Earth with them wherever they go, that is, for them to Earth-condition their habitats on the new worlds. Given the expected advance in physical science by that time, it could be done. And it would keep the colonists breeding true to the original human pattern, no matter how far into the universe they spread.

But of course, if you stick to that original pattern, your colonists will always really remain Earthmen, no matter how many generations they spend on far worlds. They might think of themselves as natives of Mars or Canopus or Rigel, but psychologically, without knowing it, they'd still be men of Earth.

What if one of them came back to Earth? What would he feel, what would Earth look like to him in a homecoming after many generations? That's the theme of *FORGOTTEN WORLD*.

Thanks, Ed. A noble concept, nobly expressed as it was nobly interpreted in the story. Now here comes Arthur K. Barnes, to tell us what was in his mind when he sat down to write *SIREN SATELLITE*.

[Turn page]

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Clean out those closets and bureau drawers now! **WHAT CAN YOU SPARE THAT THEY CAN WEAR?**

**SIREN SATELLITE** is an example of the lengths to which a writer will go in order to work out an idea with which he has become fascinated. The basic story germ for this novelet hit me one day as I was reading about the planet Jupiter.

When I noticed how rapidly this incredible giant spins upon its axis (nine hours and a few minutes for one rotation) it occurred to me that possibly a centrifugal thrust is generated which might offset the planet's terrific gravity.

This, seemingly, was an idea which had never occurred to any other writer, and I was quite tickled with the thought of throwing this factual bombshell into the ranks of science, via science-fiction.

However, a bout with a slide-rule showed that such centrifugal thrust, although it does exist, is insufficient to make any great difference with a person's weight at Jupiter's equator. Alas—disappointment!

But by that time I was so bedazzled with the idea of blossoming out as a mathematician that I determined to pick another heavenly body and adapt it, if necessary, to my purpose. With the considerable help of Mr. Murray Lesser, one of Northrop Aircraft's eminent aeronautical engineers, this was done in theory, and then Triton was found to be most nearly similar to our postulated planet.

Although it may be possible to demonstrate that Triton's gravity is not quite as I have rated it, I think the reader will find I have not otherwise tampered with the known facts.

Leaving Mr. Barnes and his slide rule for the moment, here is how the brilliant Murray Leinster emerged with the theme of **THE DISCIPLINARY CIRCUIT**.

There have been a lot of yarns about the first space-ship, so it seemed to me about time to write a story about the last one. And when I'd envisioned a galactic civilization in which spaceships were no longer needed because they'd been replaced by something better, I had **THE DISCIPLINARY CIRCUIT**.

The first thing about such an advanced civilization would be that machines would have been developed to their logical conclusion. Even now machines take over the tasks that humans find tedious or unpleasant. That's why we have adding machines and automatic stokers.

In government, though, we use machines only as traffic directors—which is tedious—and as public executioners, which is unpleasant. You might say that traffic lights, guillotines, and electric chairs are, so far, the only machines which are public officials.

But as machines go on from the tedious and unpleasant jobs to others that they can do more efficiently than human beings, it seems that they should do so in government. And what could be more logical than a mechanical police force? After all, it would simply be an expansion of the traffic-light system! Instead of seeing that the traffic laws only were obeyed, it would enforce all laws.

But we humans have an instinct of suspicion.

We'll never make a machine that some man doesn't have to turn on and off. So even in a completely mechanized government there would have to be men to supervise the machines, or mankind would be suspicious of them—unable to accept them as government.

And since men are as they are, the more efficient the machines which act as government are, and the more power their efficiency centers in their controls, the stronger will be the temptation to the men in charge to use that power for their personal satisfactions.

You figure it out. Maybe you'll get something else. I got THE DISCIPLINARY CIRCUIT as my answer.

## THE READER SPEAKS

(Concluded from page 109)

yellow-bordered-with-red letters was spelled THRILLING WONDER STORIES.

Having definitely established the mag's identity, I bought it and proceeded to glance at the "artwork"—snicker. The pics for Leinster's story were better than the usual stuff that fills the pages. Who drew them?

The three best stories were "Things Pass By," "The World Thinker" and "Purple Dusk."

Corporal Wells' letter amused me no end. Evidently he's one of those individuals who can't see any farther into the future than next week, and who thinks the world's perfect as it is.

He doesn't want the telephone to take a back seat to an oscillaphone. Suppose the oscillaphone is the size of a pocket watch with a 1080 mile range, portable, and costs \$15 with an operating cost of 10¢ a month. With a gadget like that for about twenty years, we should keep telephones!!! You may, Corporal Wells, but I wouldn't.

Miss Montague, you sound as if you would be right at home among the local group of fans. I liked the way you got into Sergeant Saturn's hair. We have a lot of fun at our gatherings. If you are interested, contact me. The same goes for any other stff and fantasy enthusiast in New Orleans who would like to get into the group. My phone number is Galvez 7087.

Tom Pace wants to know why I did what I did. Hasn't he learned yet that I can't be explained by ordinary rules? Frankly, I got my mag dates all mixed up.

A poem—

Violets are red  
Roses are blue  
Or so they seem  
After the thirteenth Xenuie.

—1303 Mystery Street, New Orleans 19, Louisiana.

Xenuie, huh! Blast him into the outer galaxy, Snaggletooth. Too much is too much, especially when he gives his phone number to a myopodema. Ye gods, Greenleaf is not the only mixed one up. No bout adoubt it, Snaggle-ears. . . . Oh, what's the all of it use. Take her away, Wart-eyes. It was the xenteenth founro that tood it did us. Song lo, bodyevery!

—SERGEANT SATURN.

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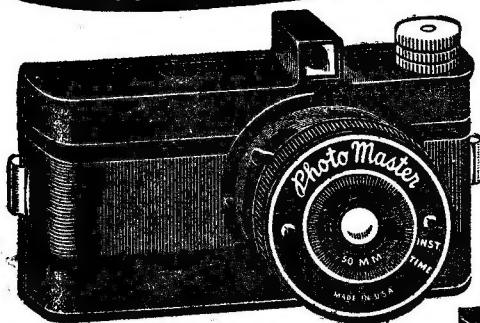
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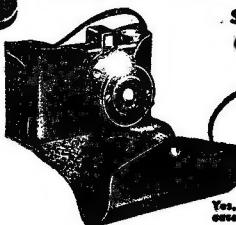
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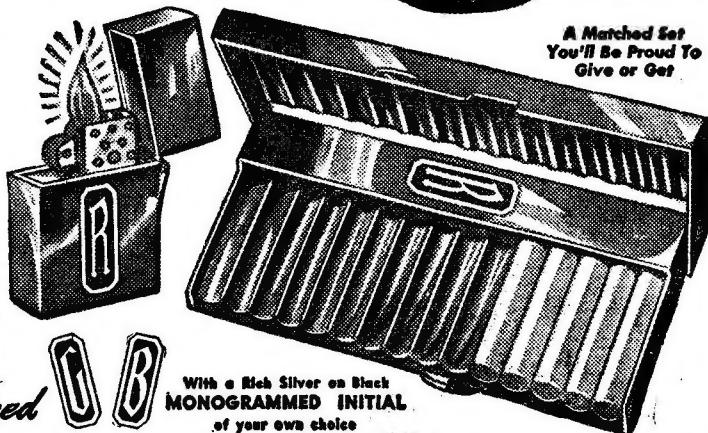
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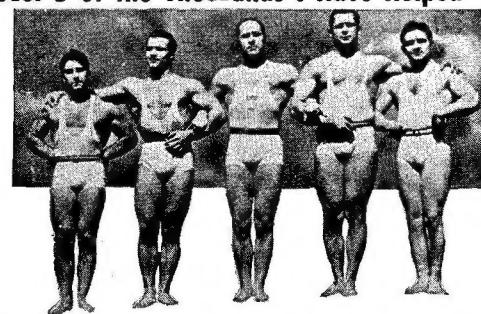
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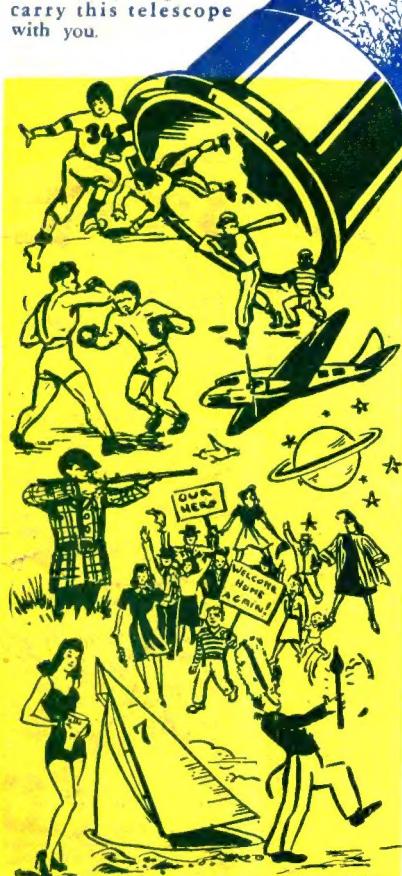
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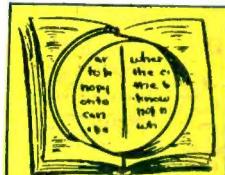
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